

FIG. 1

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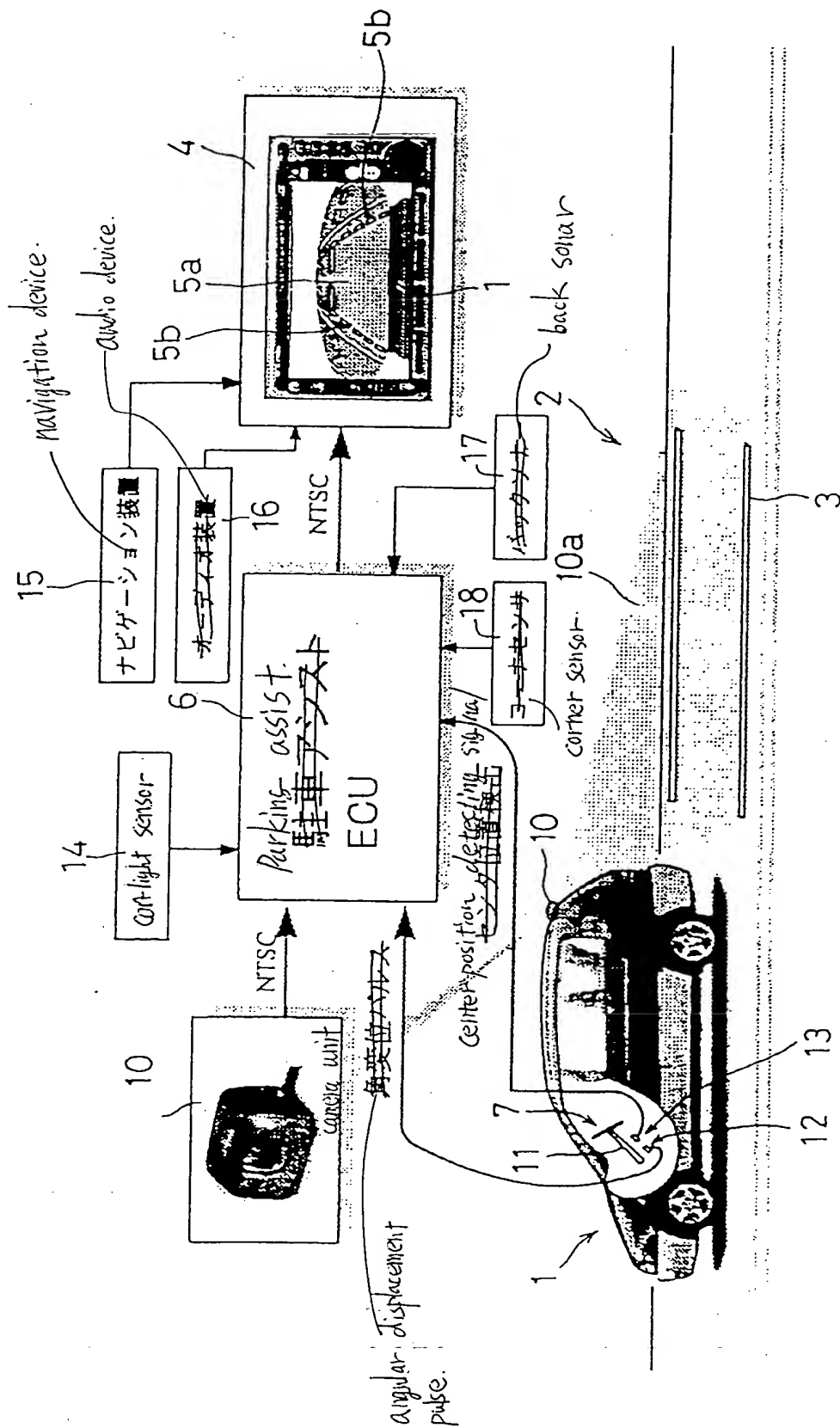


FIG. 3

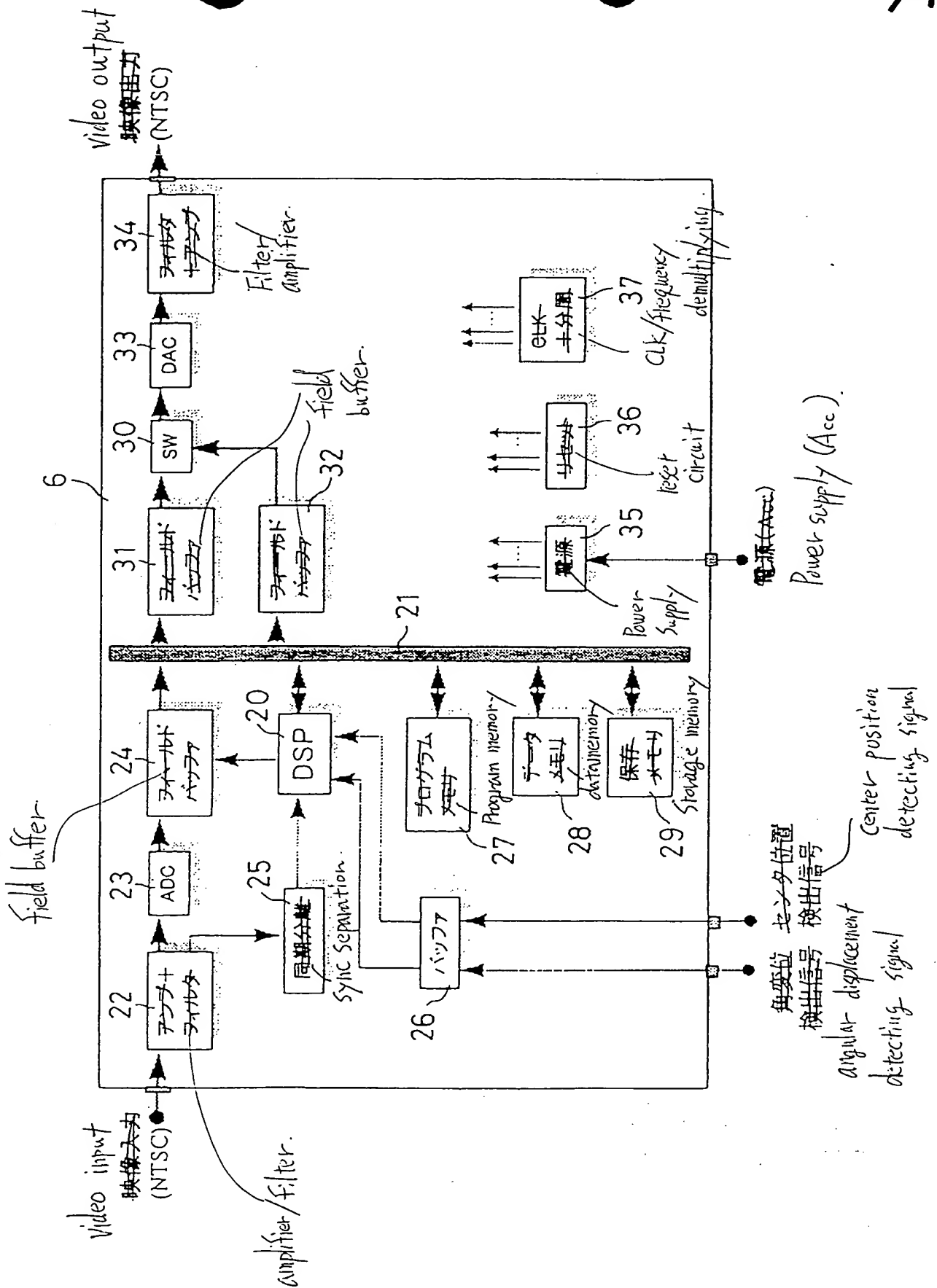


FIG. 4A

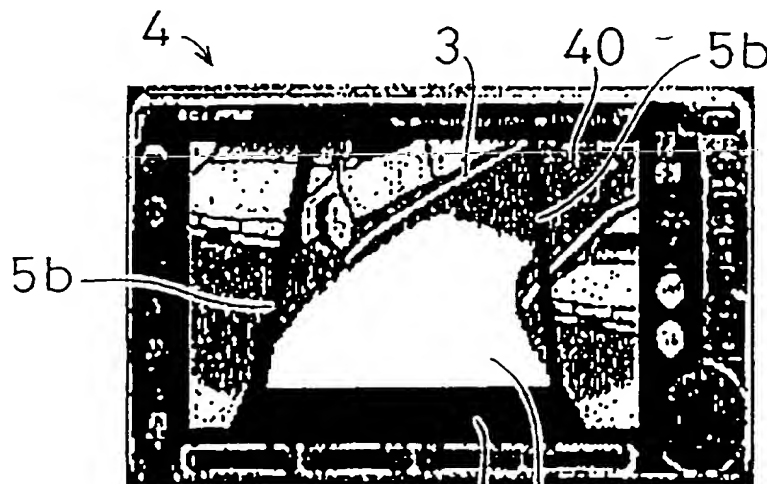


FIG. 4B

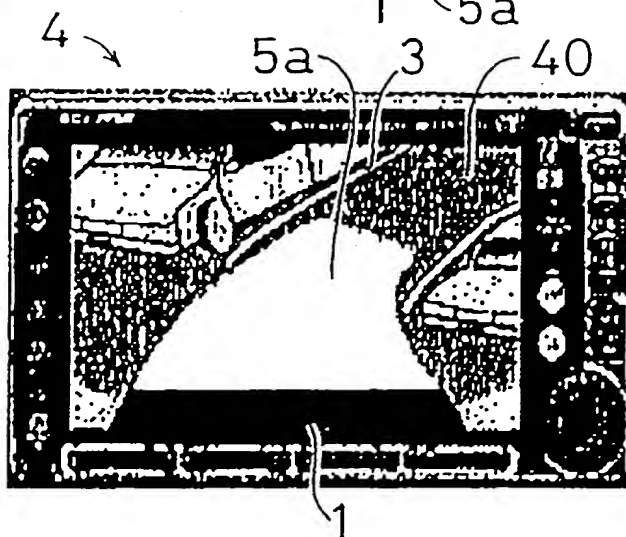
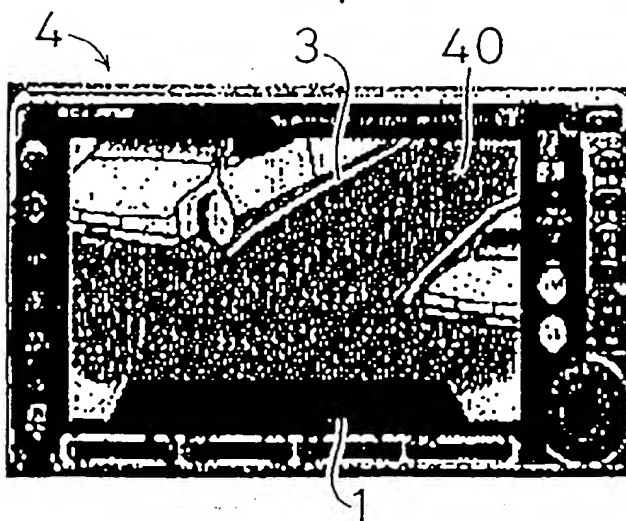
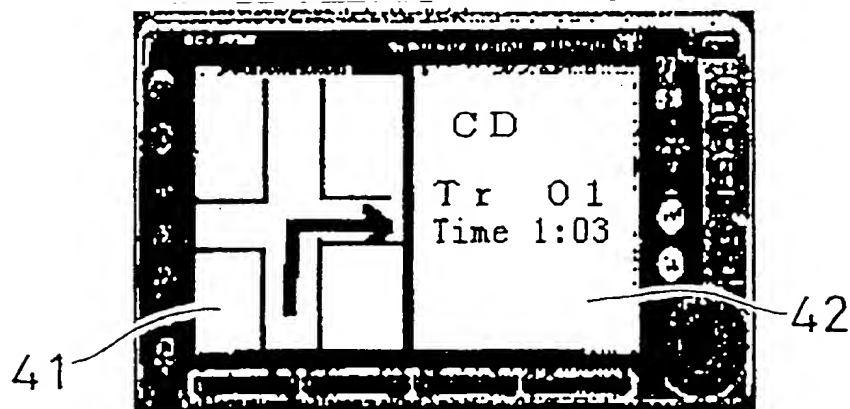


FIG. 4C



4 FIG. 5



4 FIG. 6

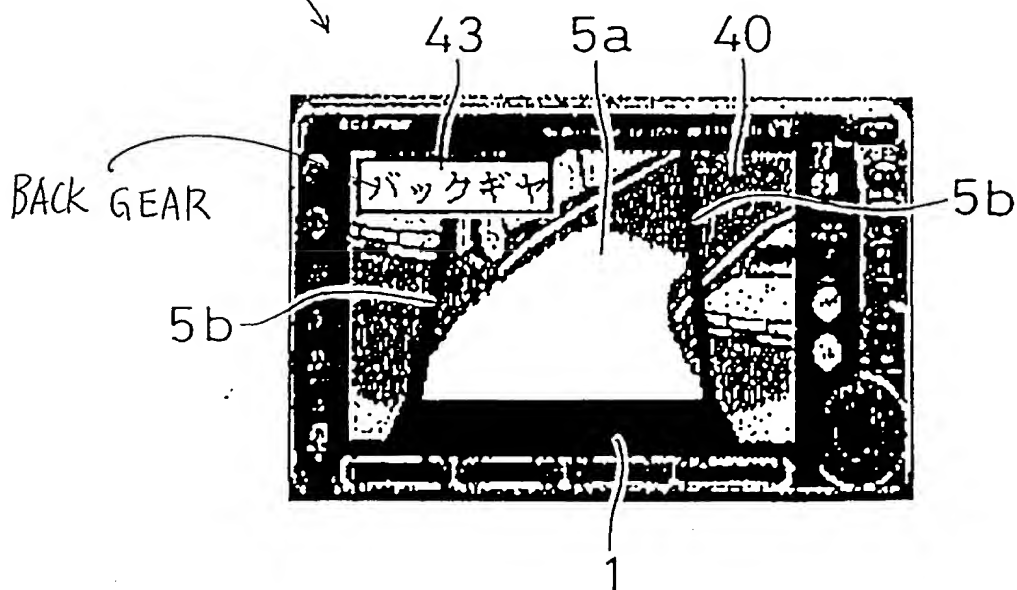
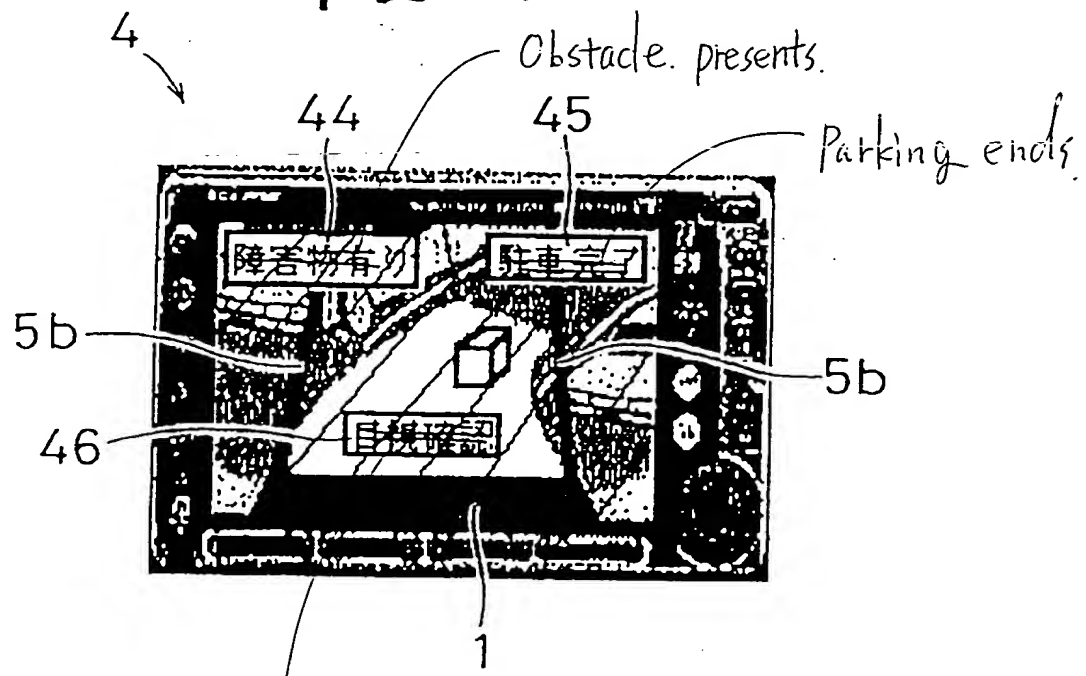


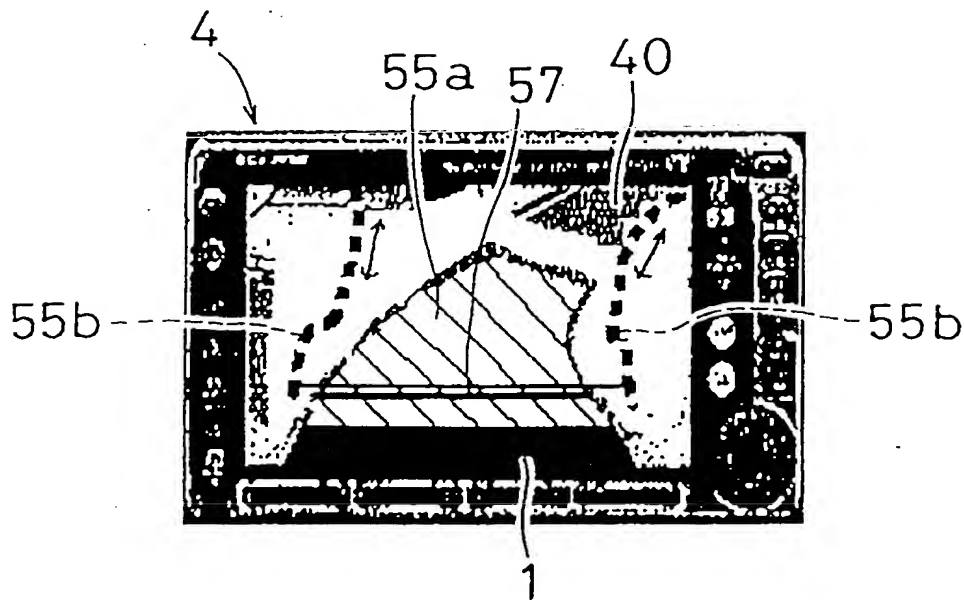
FIG. 7



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FIG. 9

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FIG. 10

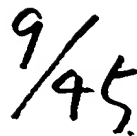


FIG. 11

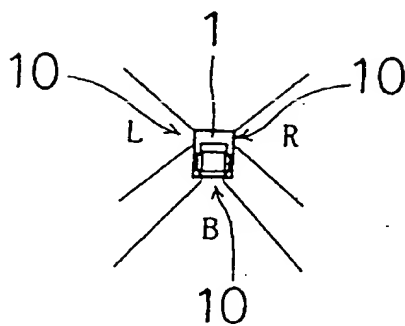


FIG. 12.

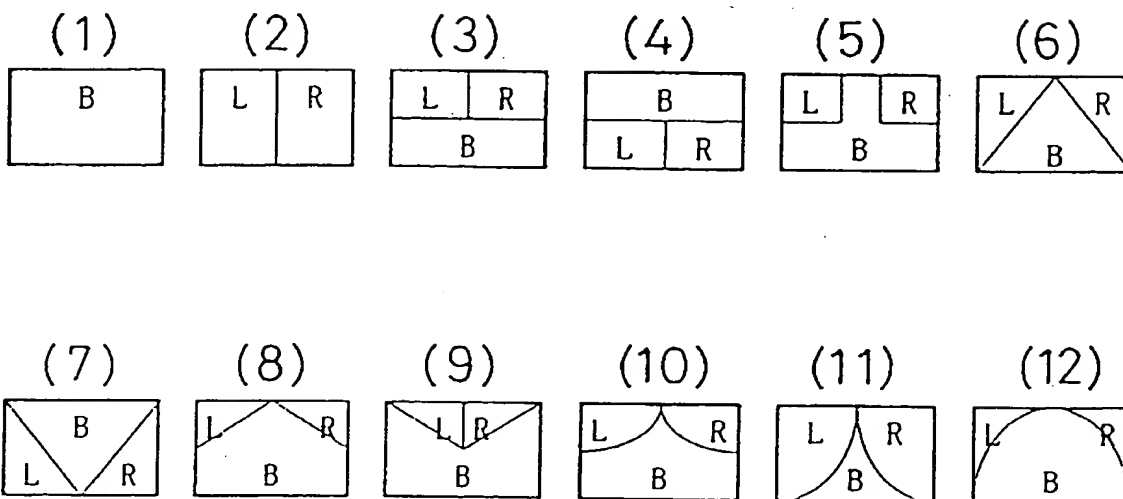


FIG. 13.

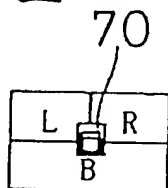


FIG. 14A FIG. 14B FIG. 14C FIG. 14D

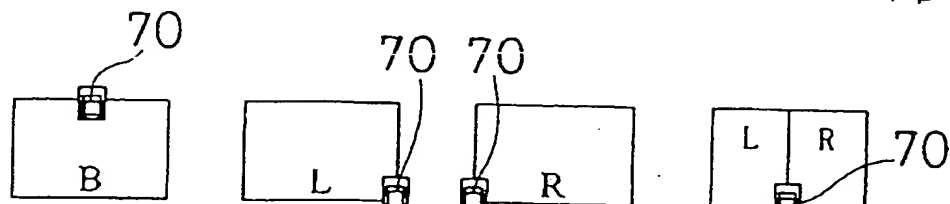


FIG. 15

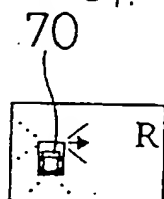


FIG. 16

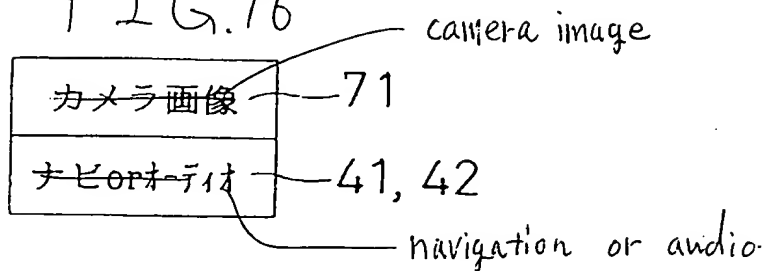
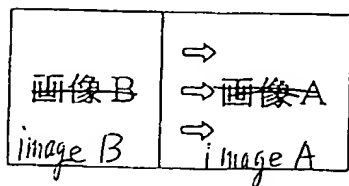
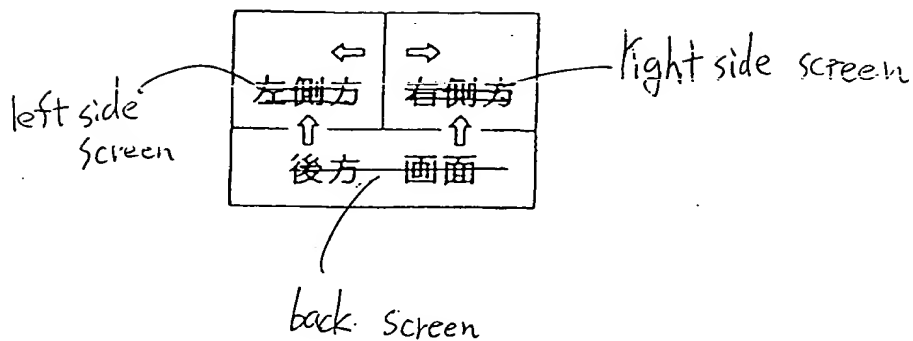


FIG. 17



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FIG. 18



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FIG. 19

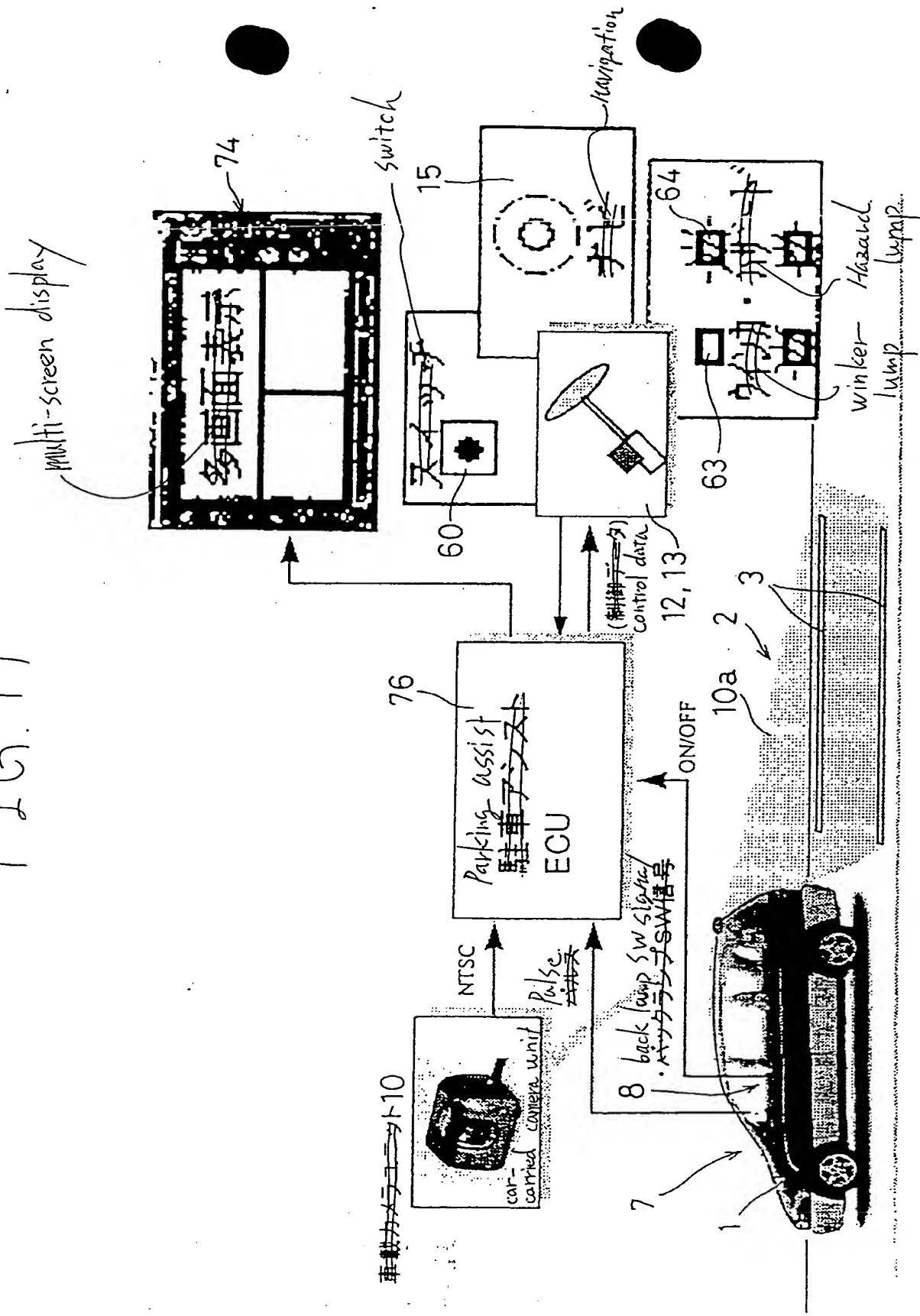


FIG. 20B

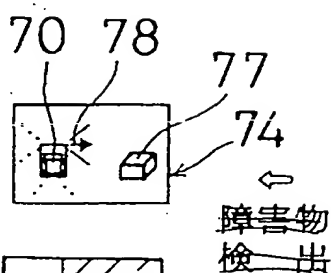


FIG. 20C

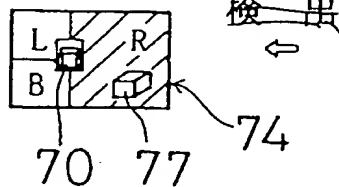
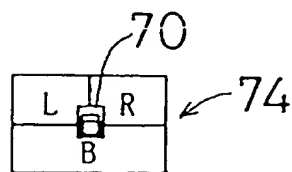


FIG. 20A



obstacle detection.

FIG. 21A

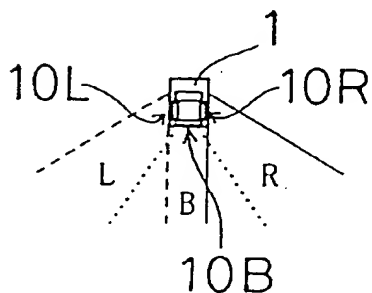


FIG. 21B

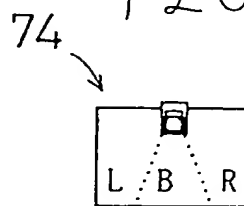


FIG. 22A

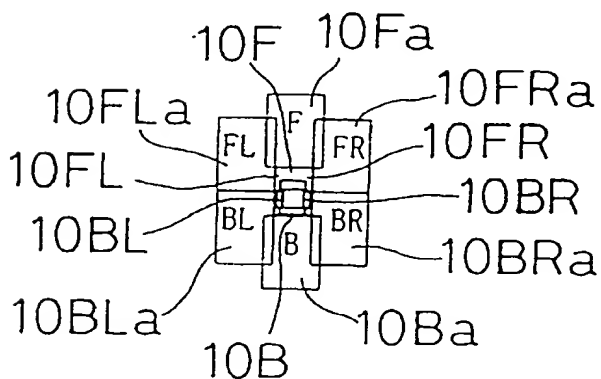


FIG. 22B

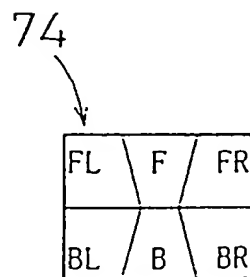
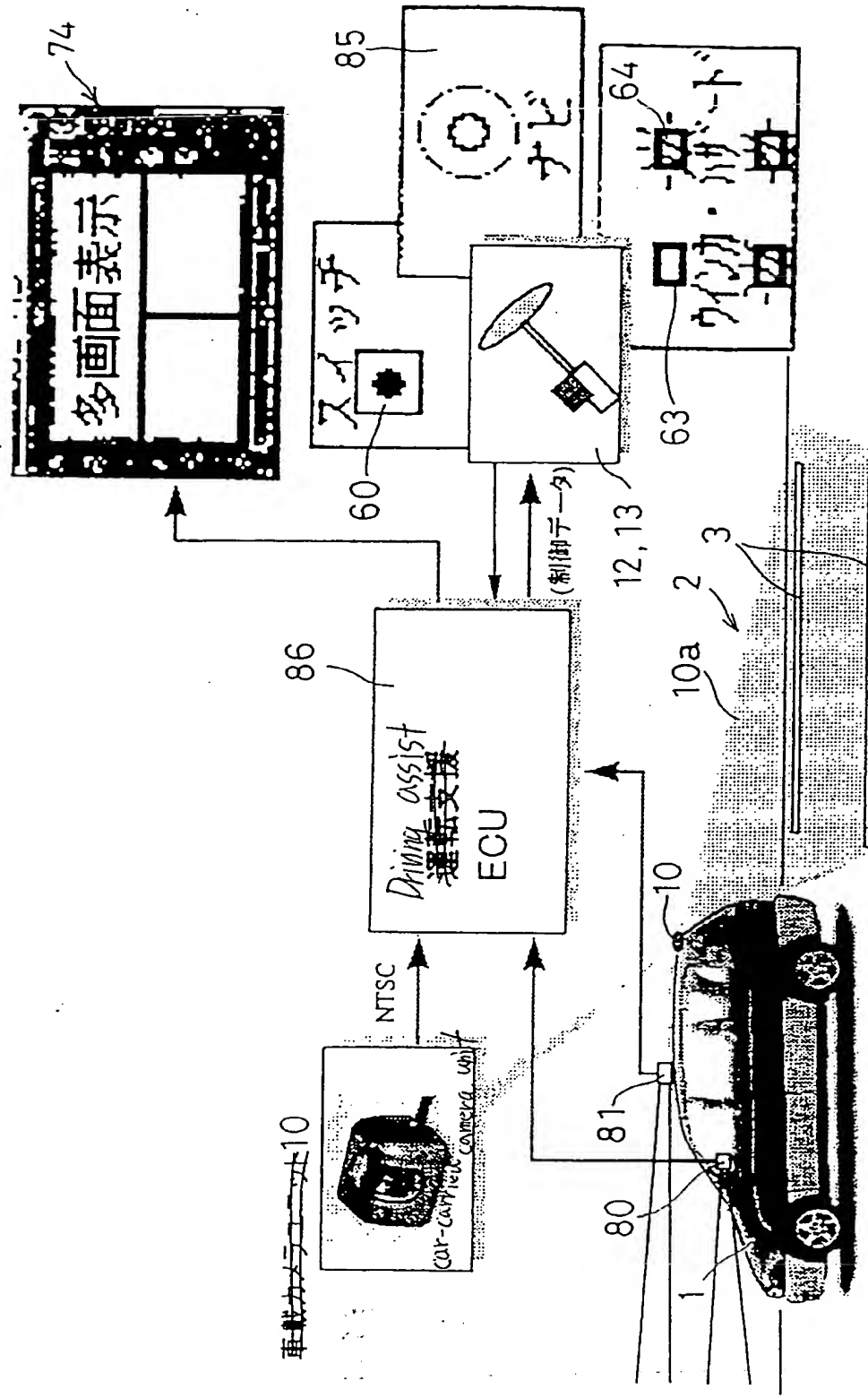


FIG. 23



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FIG. 24A

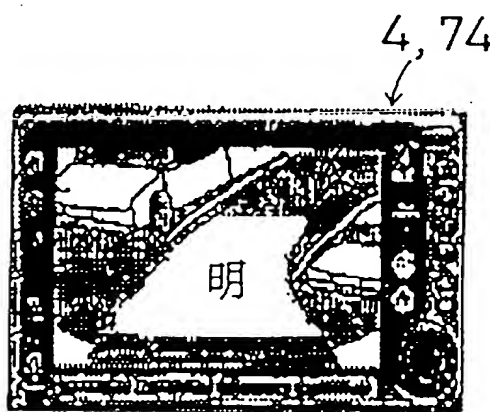


FIG. 24B

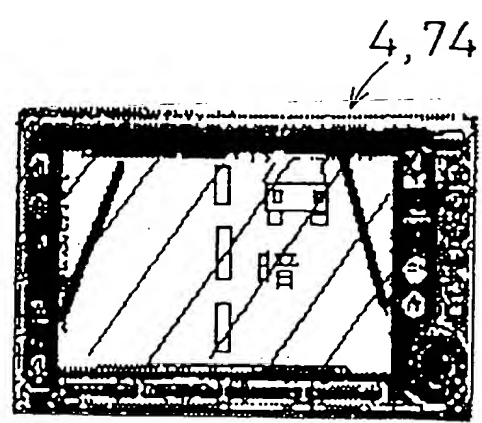
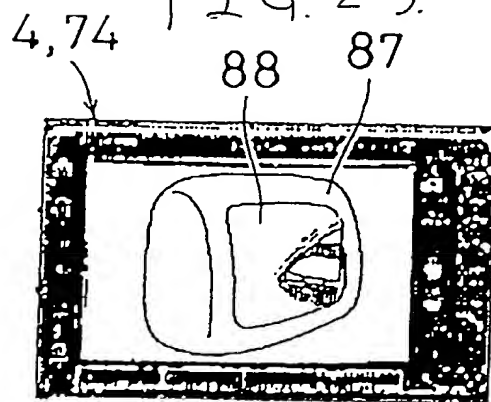


FIG. 25.



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FIG. 27

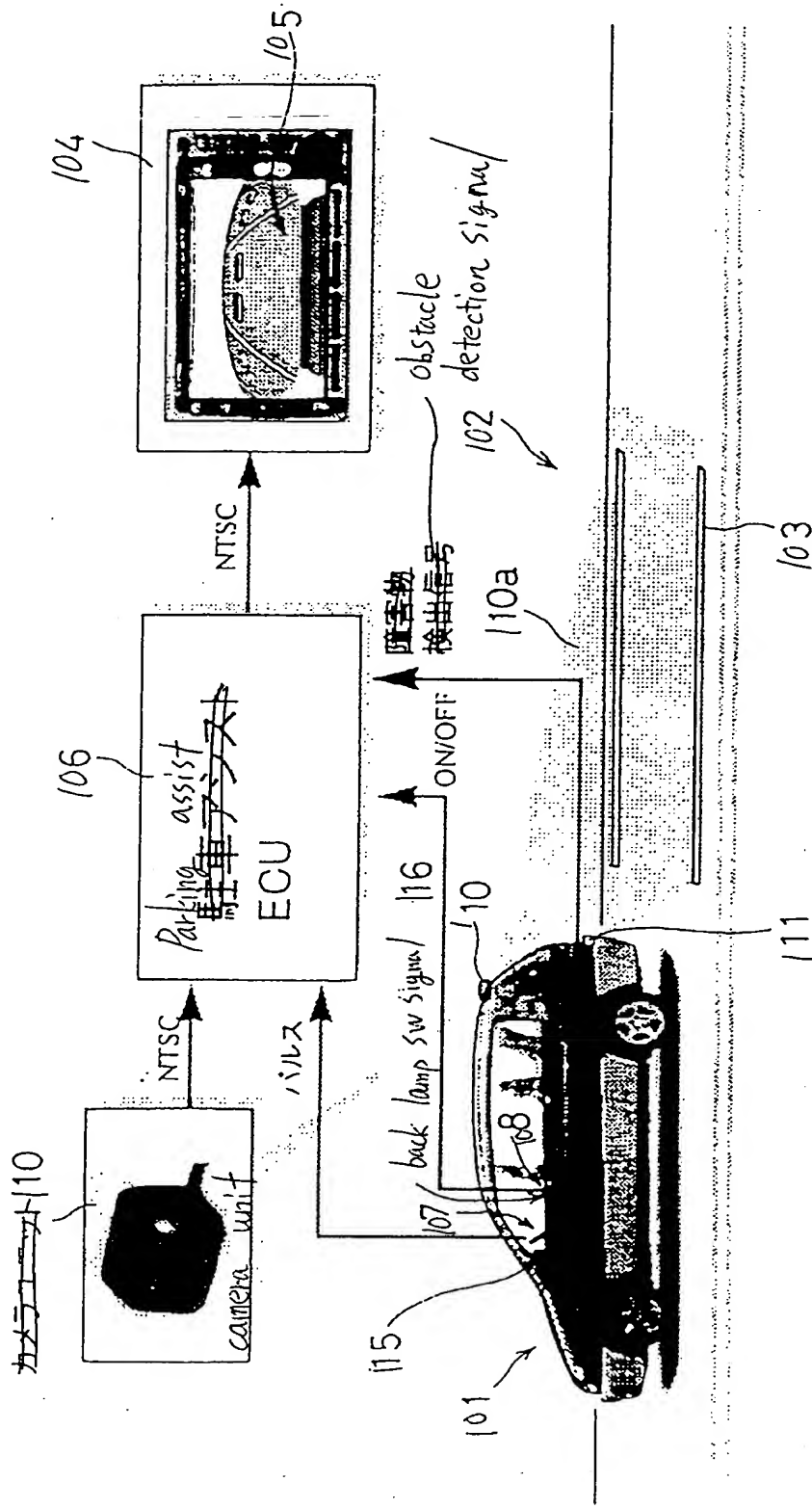


FIG. 28

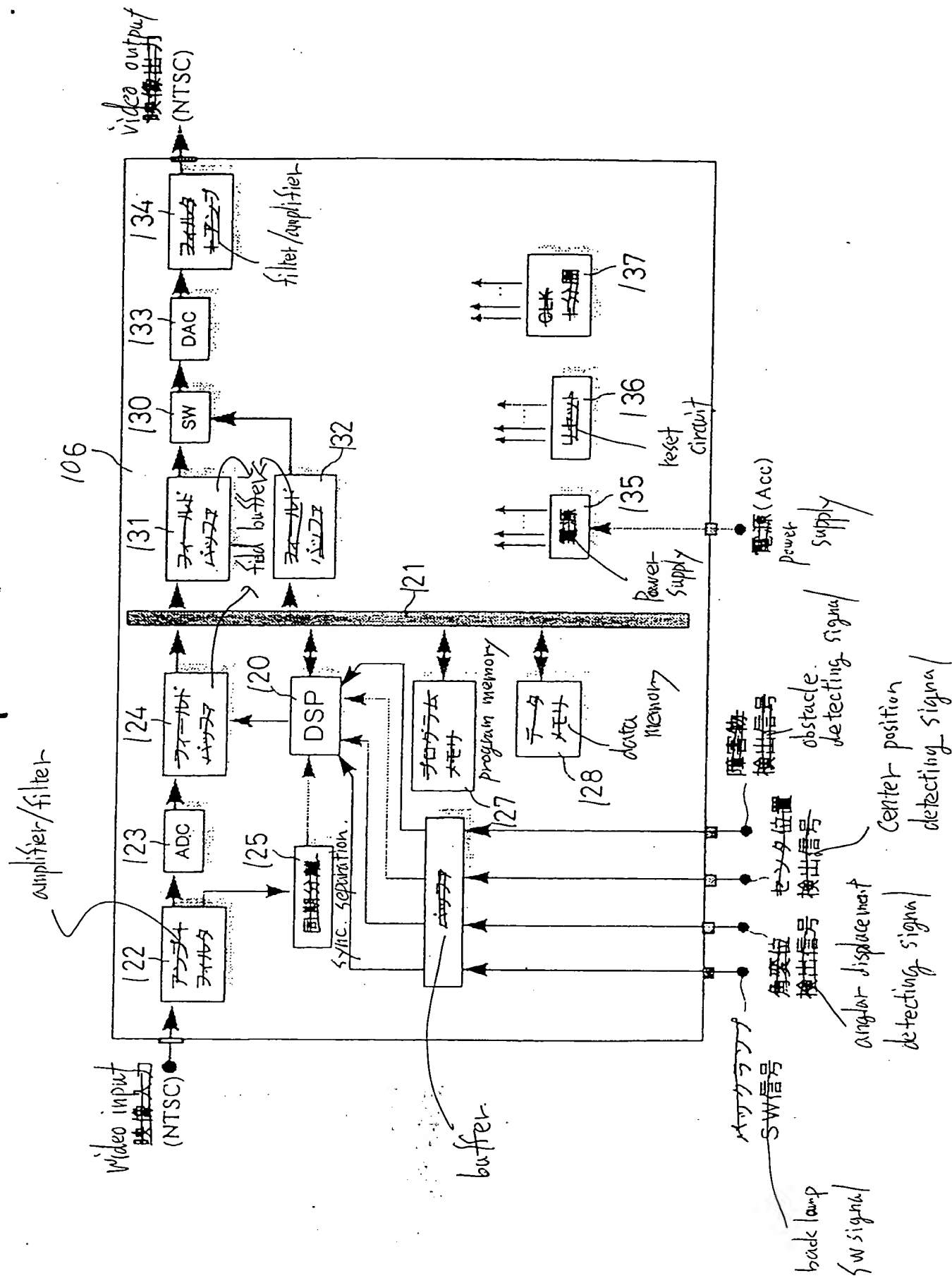
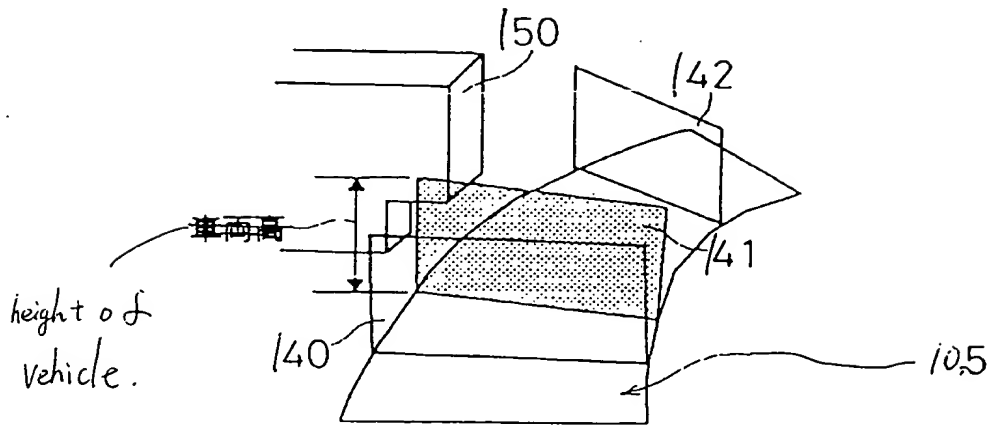
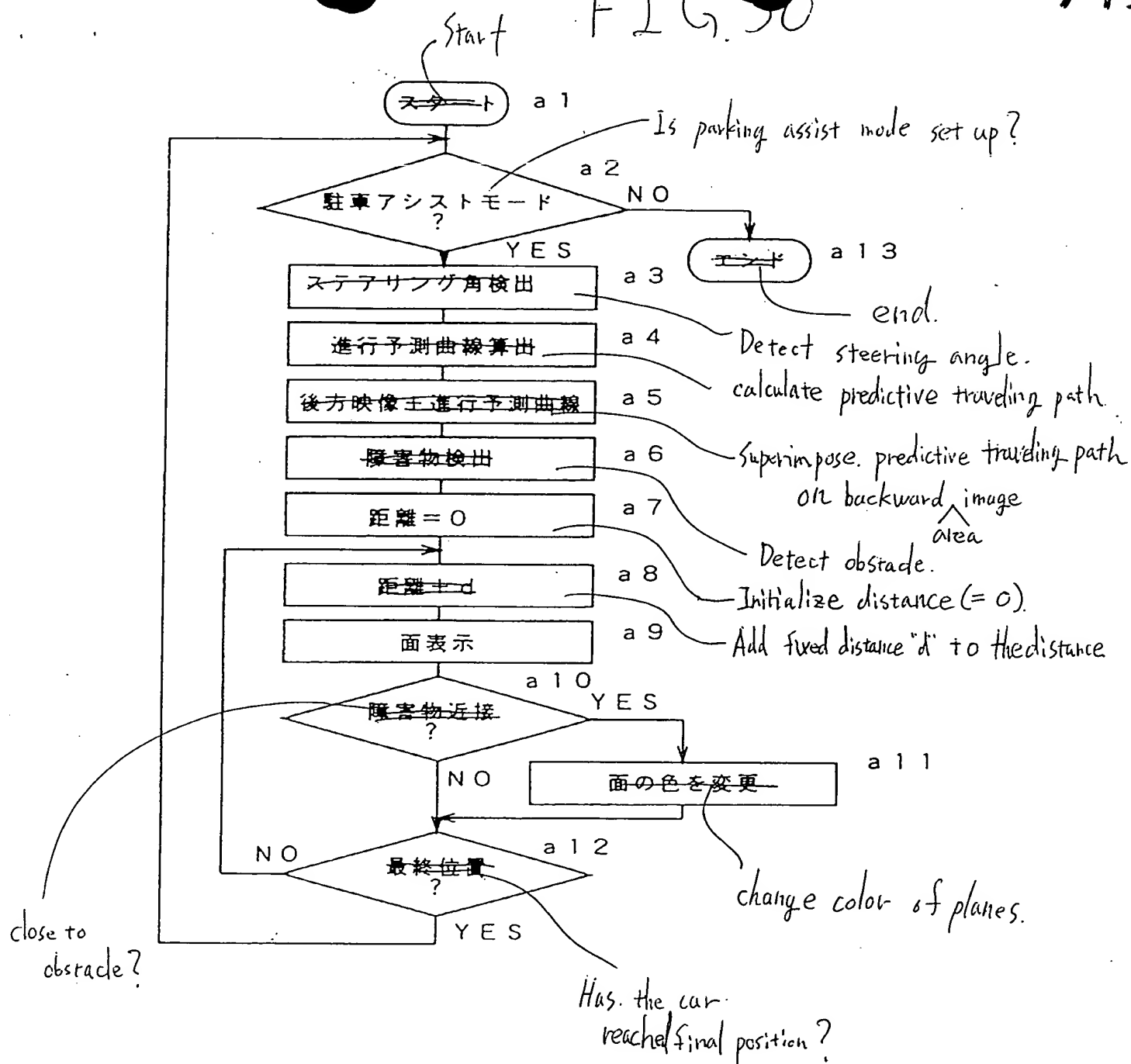


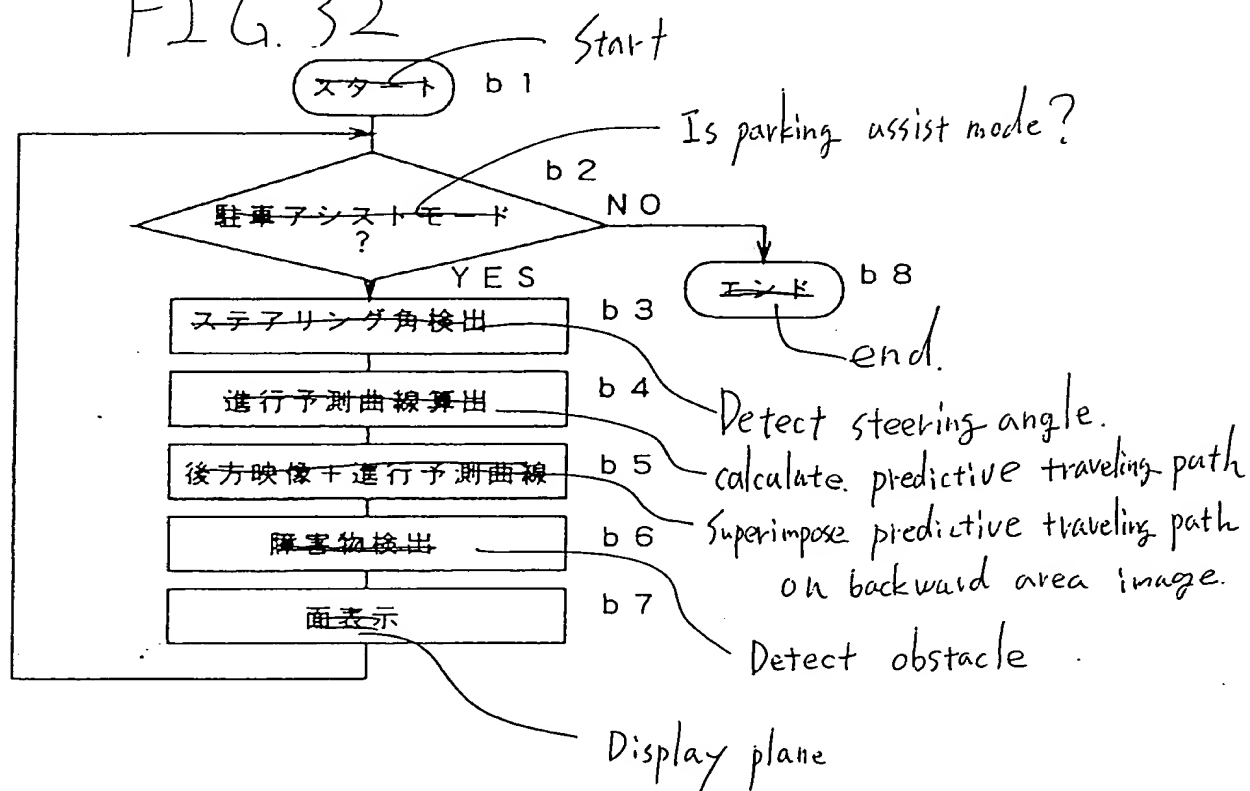
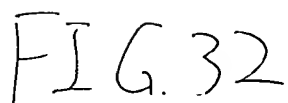
FIG. 29

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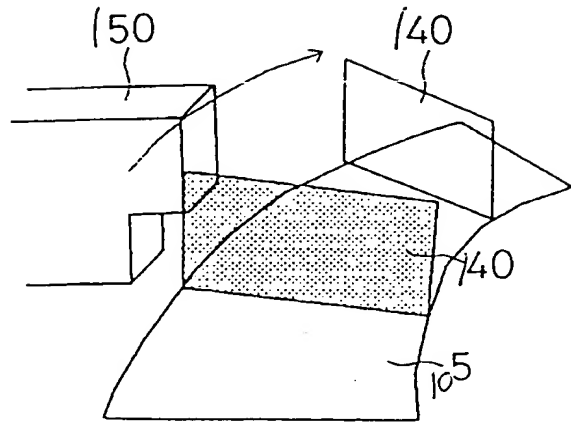
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FIG. 33



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FIG. 34

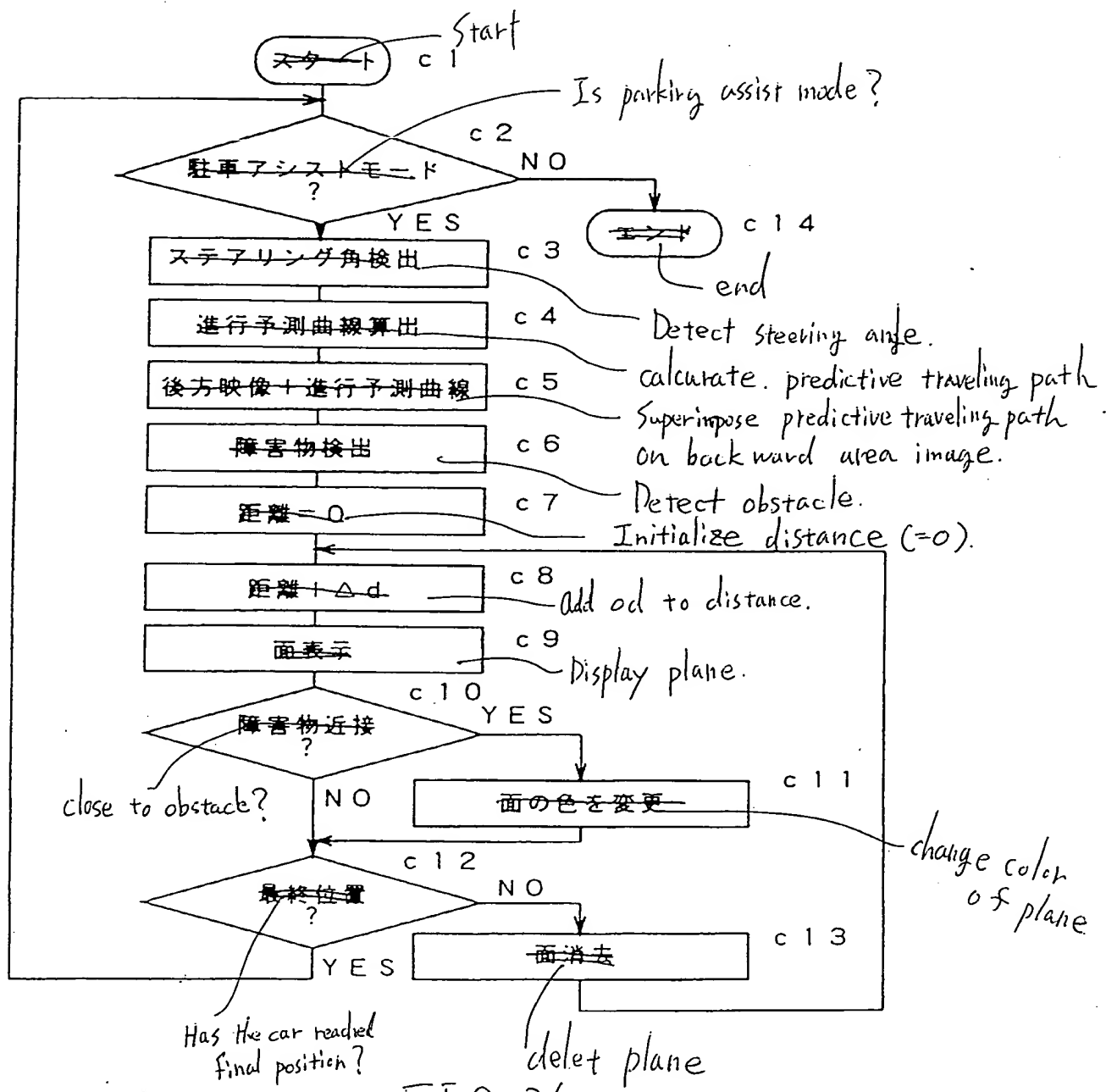
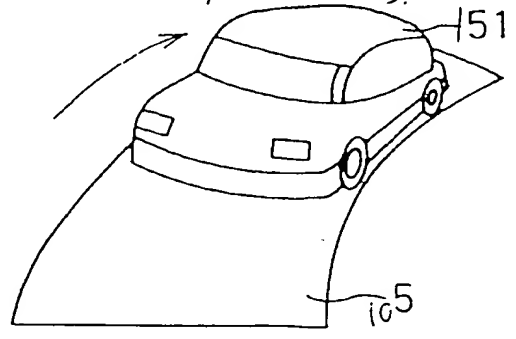


FIG. 35



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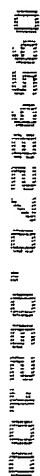


FIG. 38

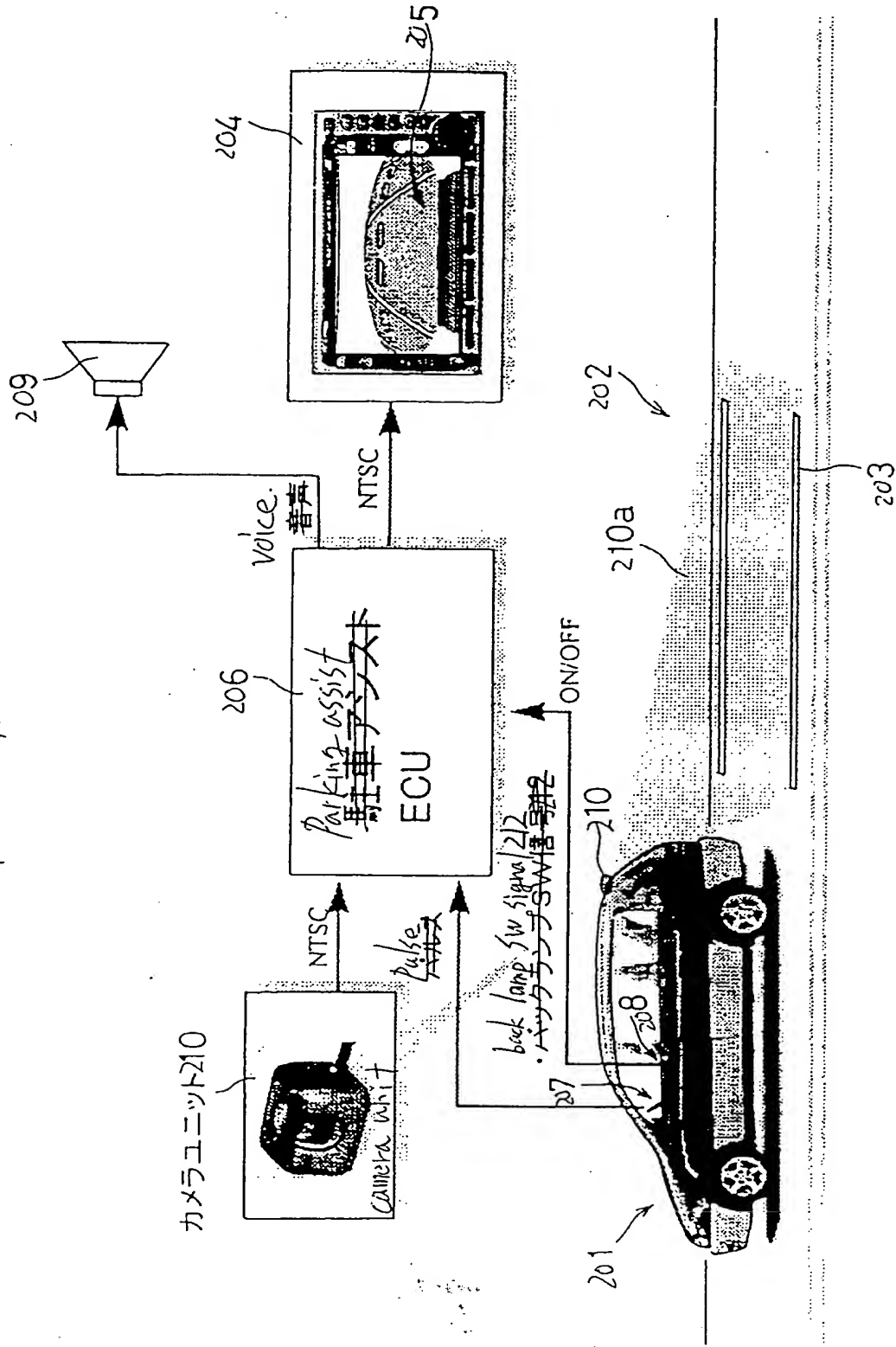


FIG. 39

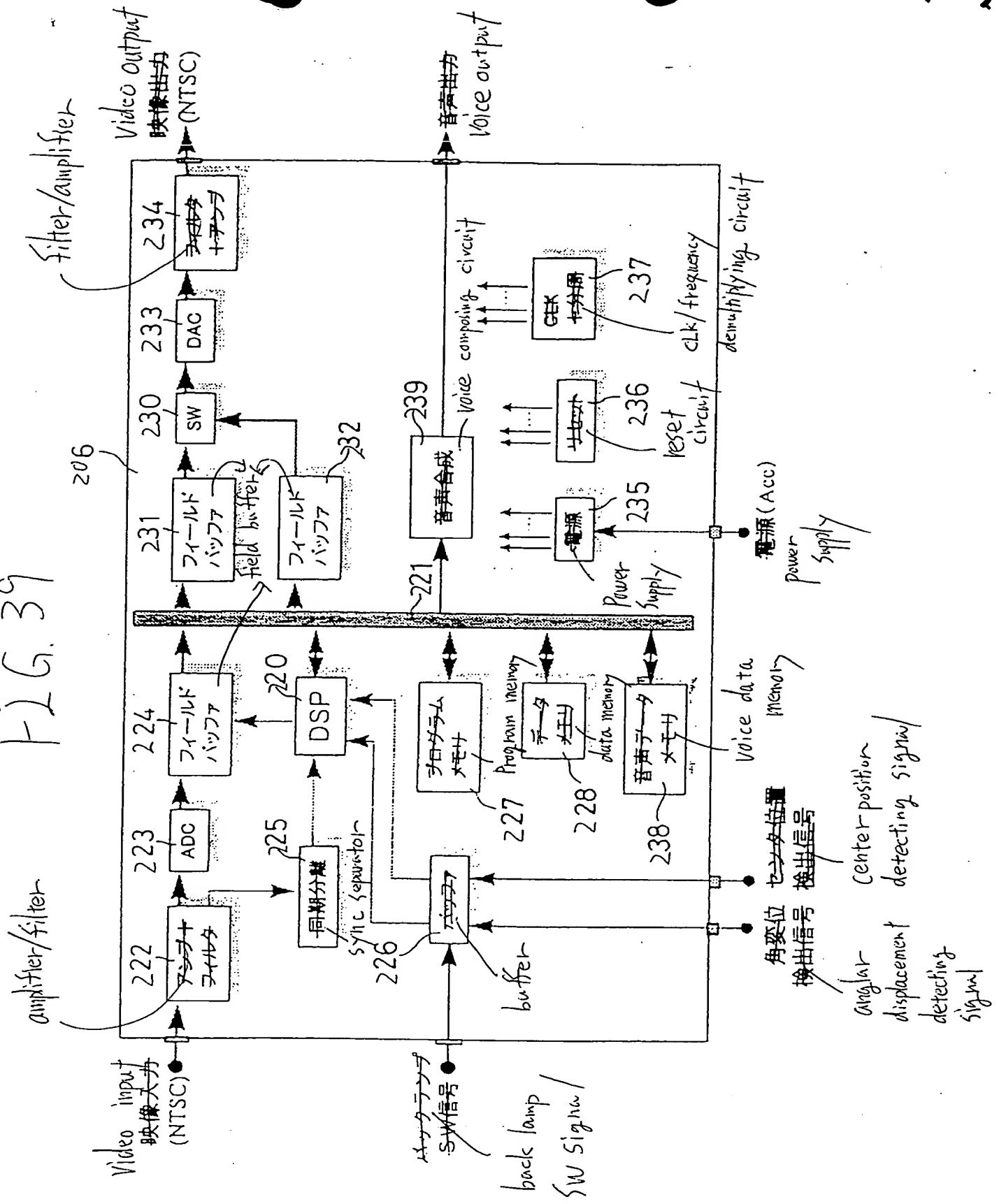
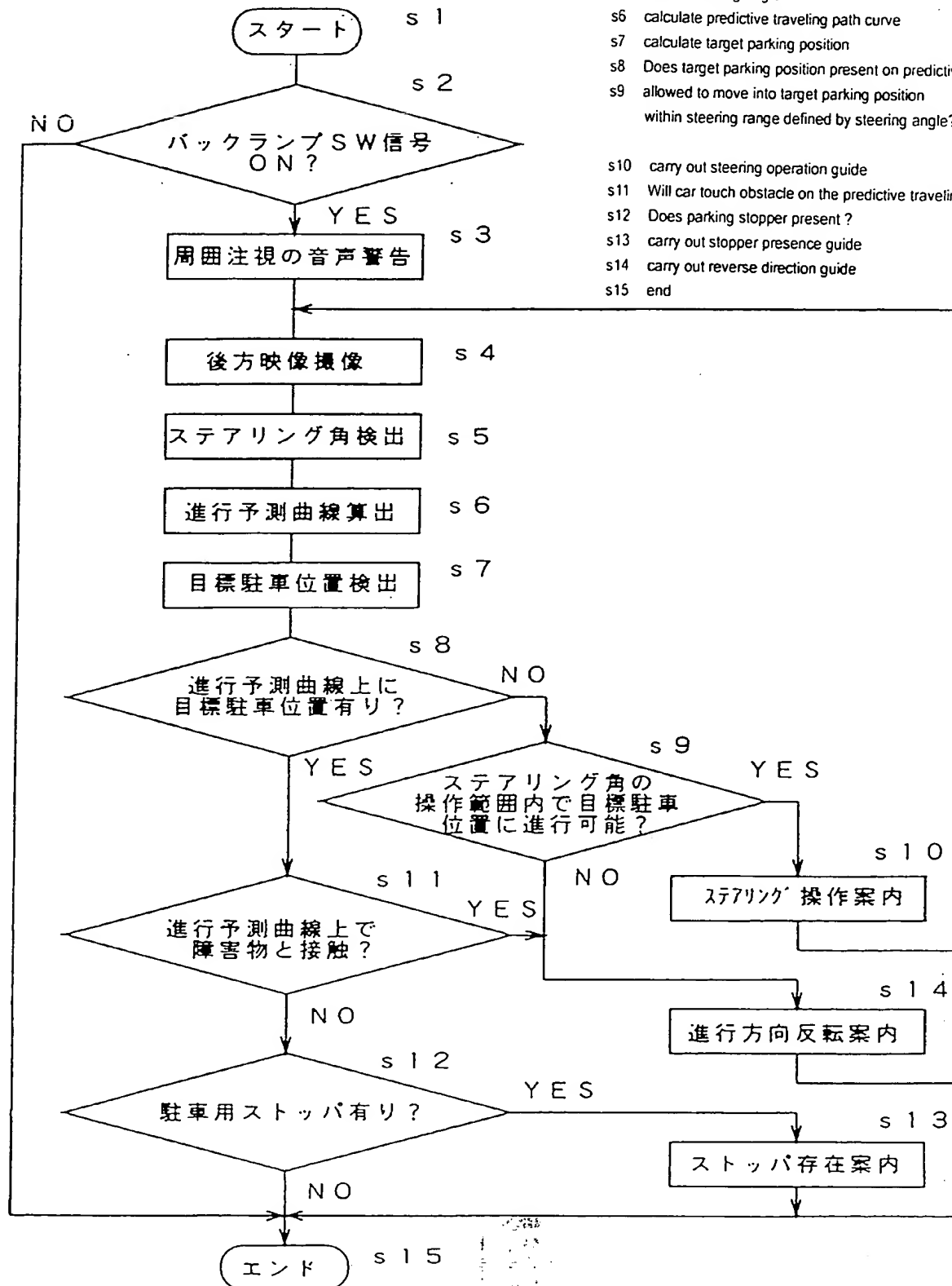


FIG. 40

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- s1 start
- s2 Is back lamp signal in on state?
- s3 sound alarm to watch environment
- s4 pick up backward scene
- s5 detect steering angle
- s6 calculate predictive traveling path curve
- s7 calculate target parking position
- s8 Does target parking position present on predictive traveling path curve?
- s9 allowed to move into target parking position within steering range defined by steering angle?
- s10 carry out steering operation guide
- s11 Will car touch obstacle on the predictive traveling path curve?
- s12 Does parking stopper present?
- s13 carry out stopper presence guide
- s14 carry out reverse direction guide
- s15 end



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FIG. 4

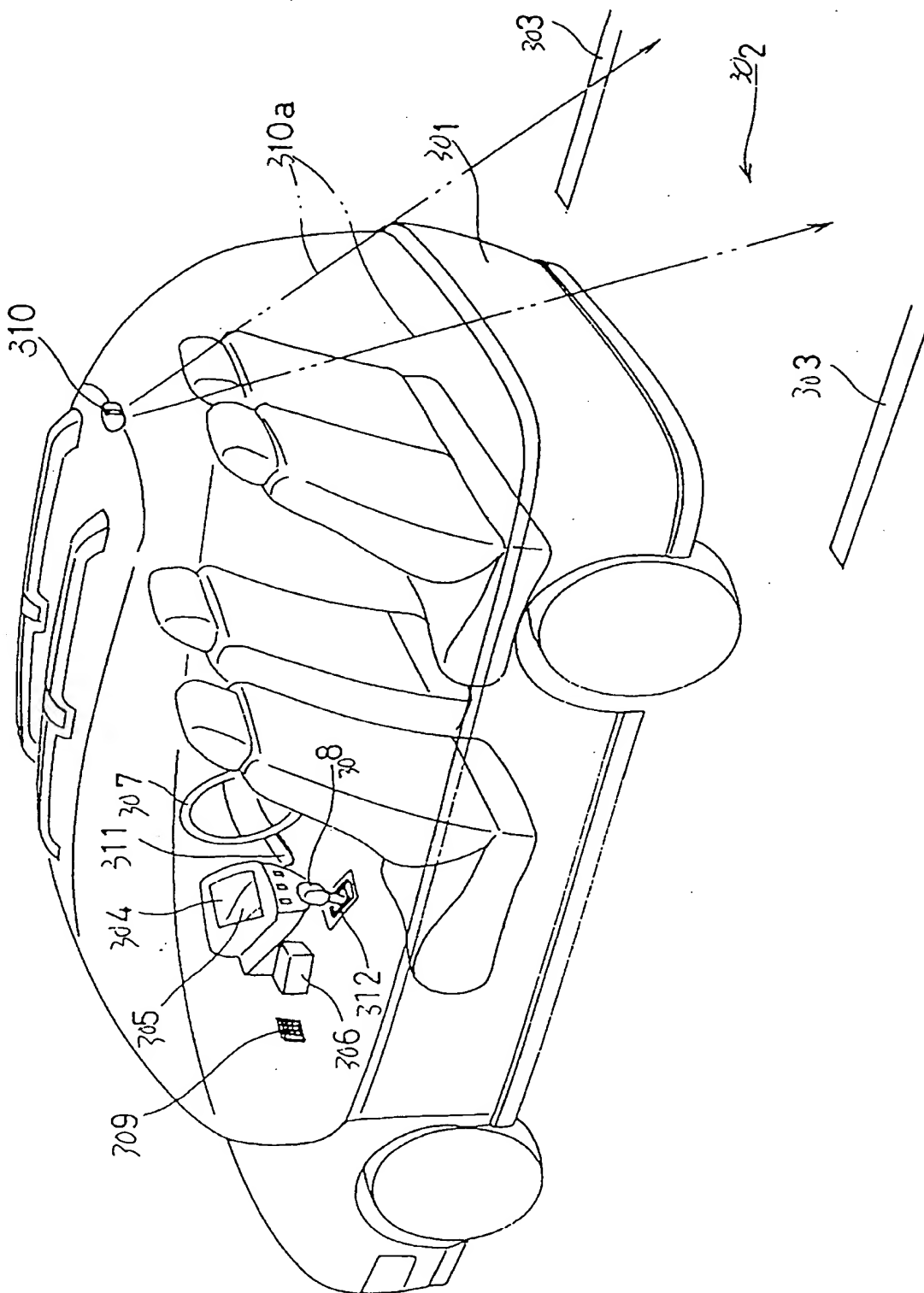


FIG. 42

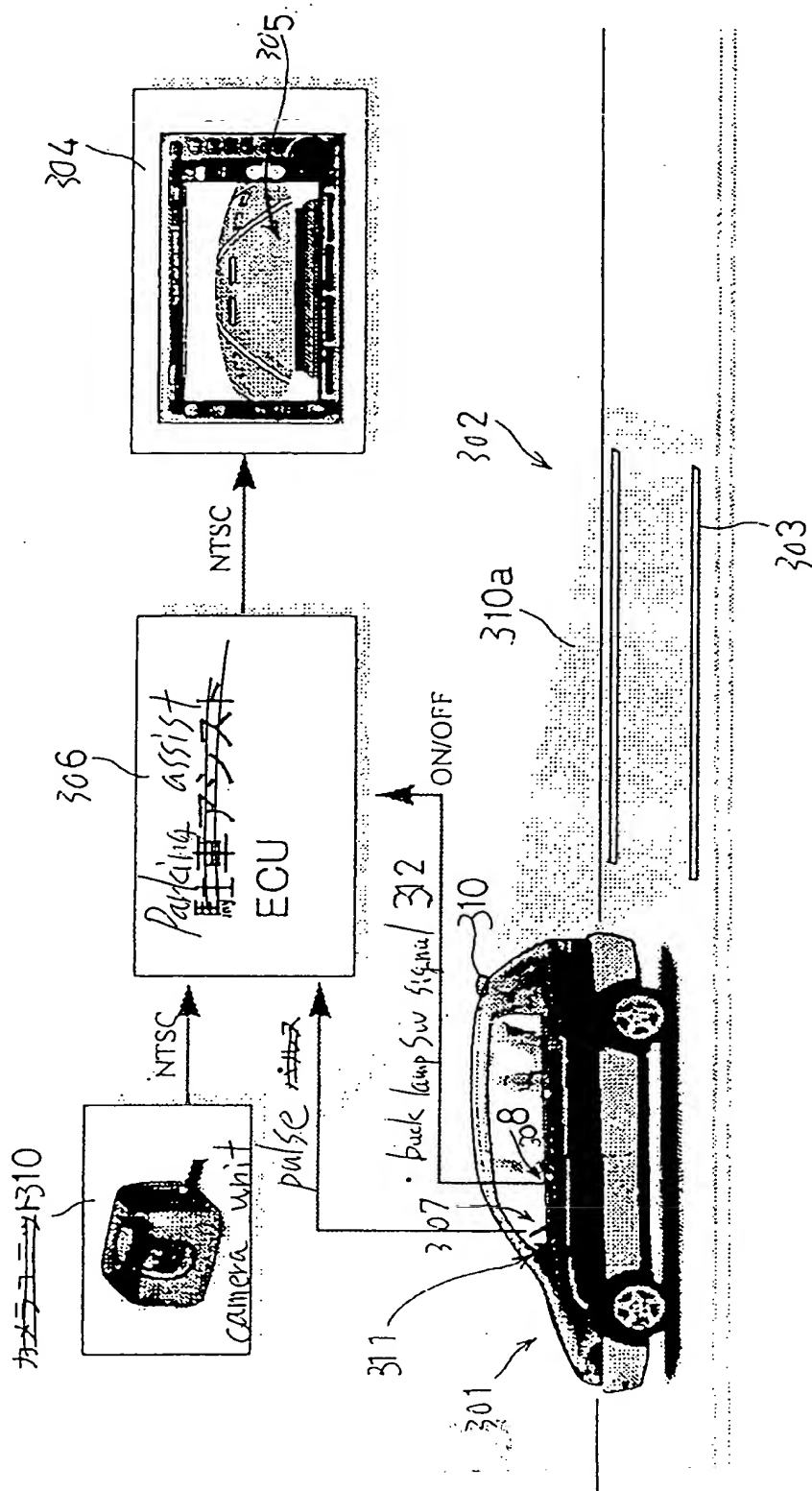


FIG. 43

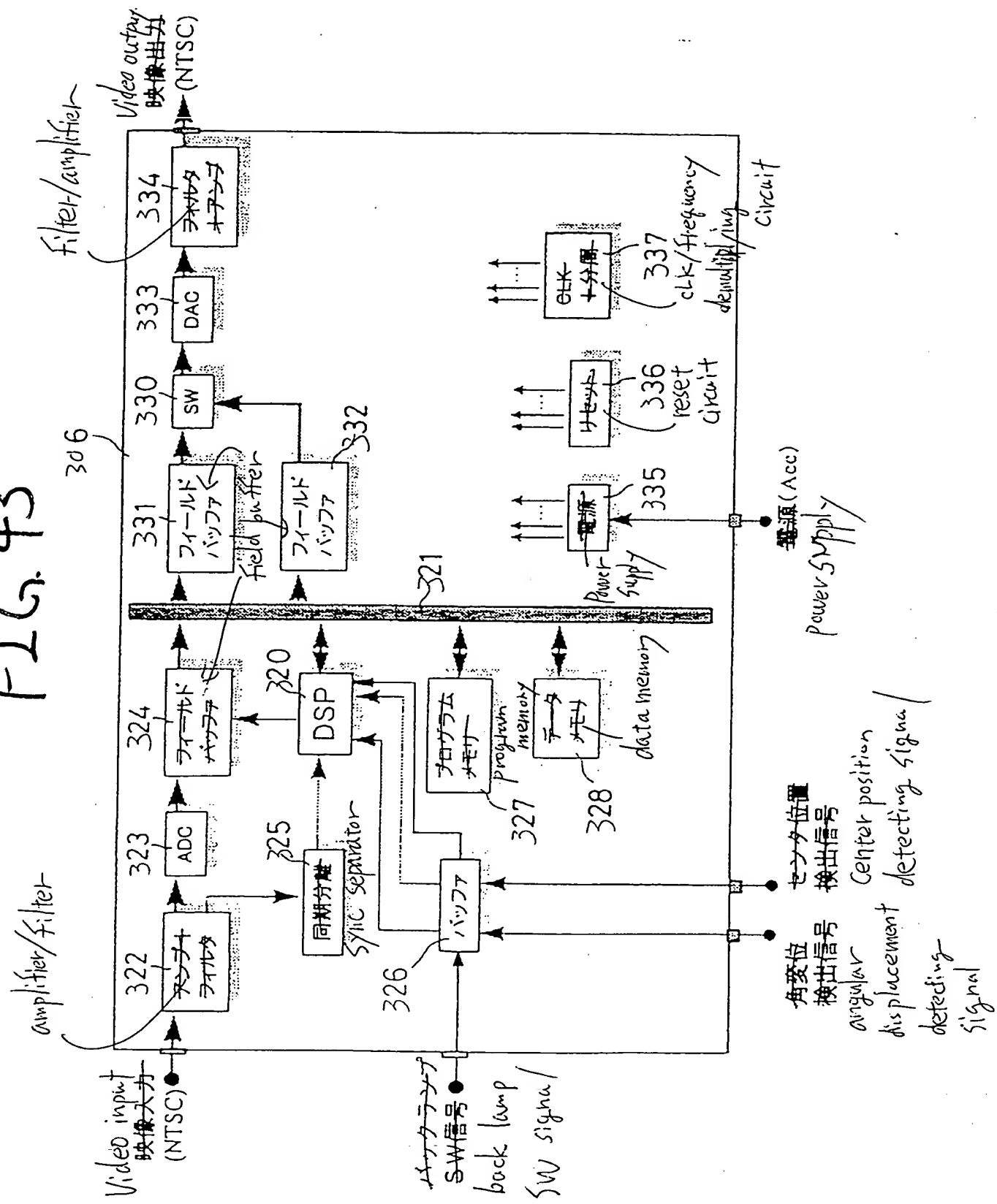
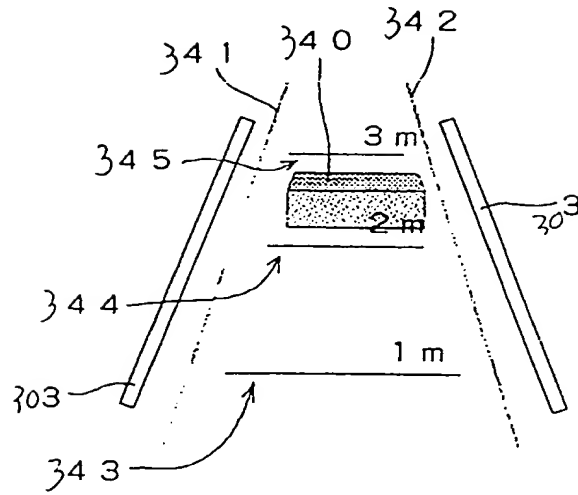


FIG. 44

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FIG. 45

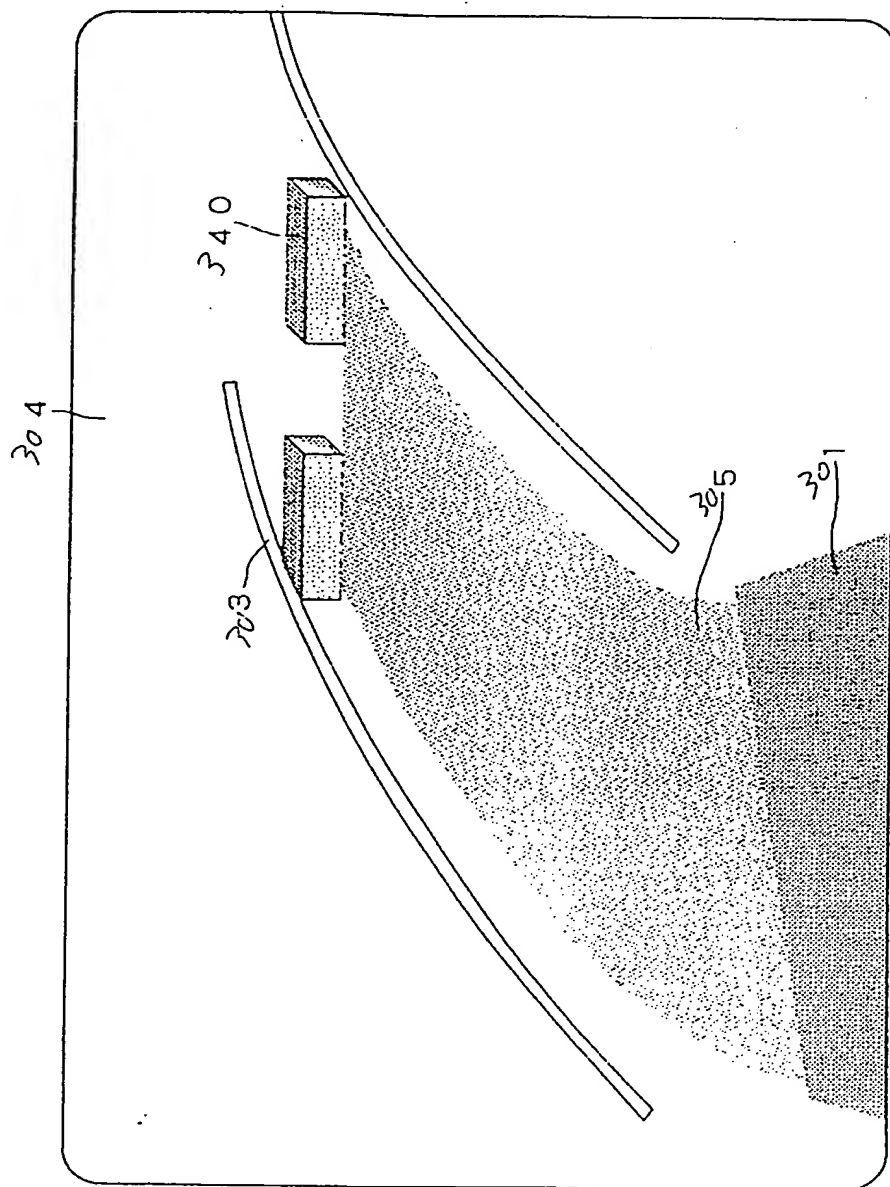


FIG. 46

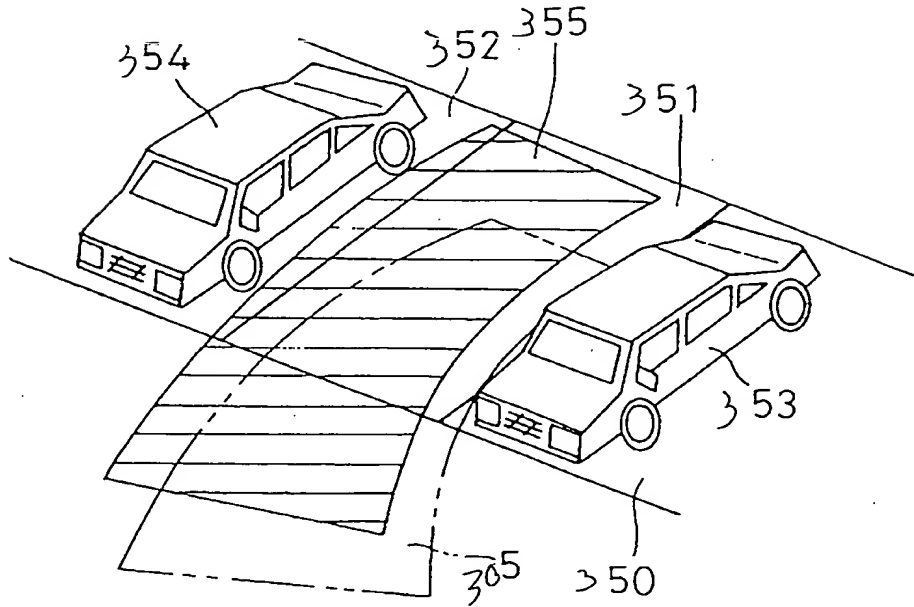


FIG. 46

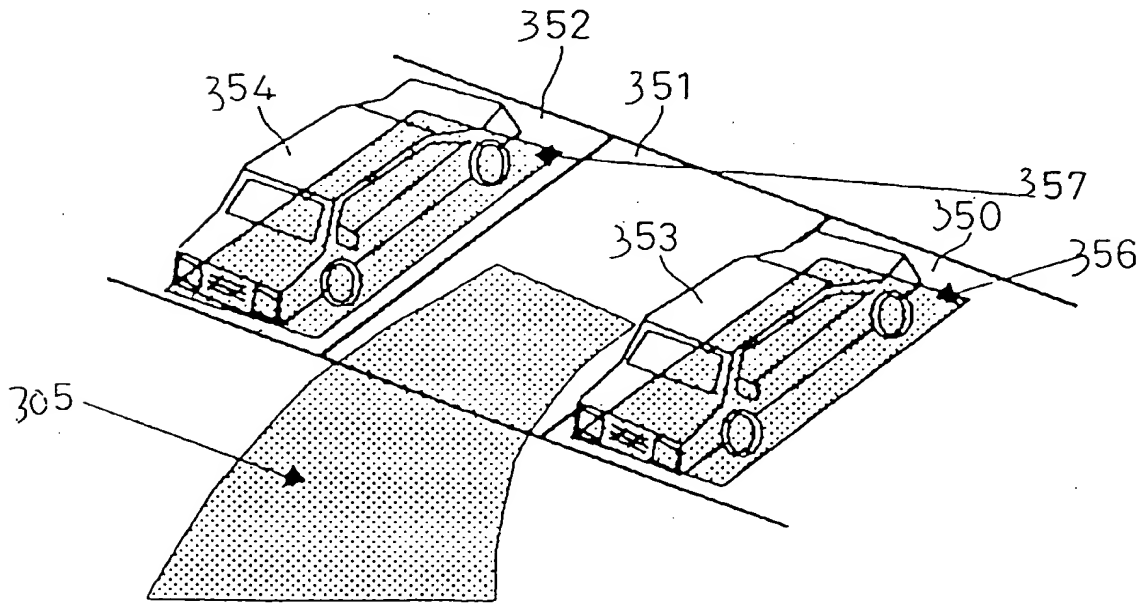
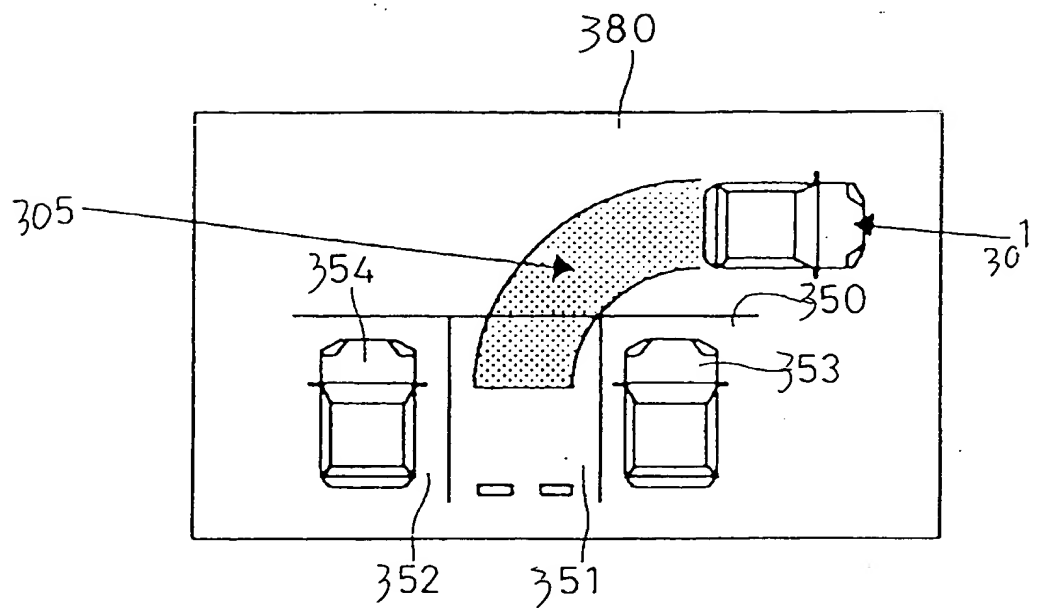
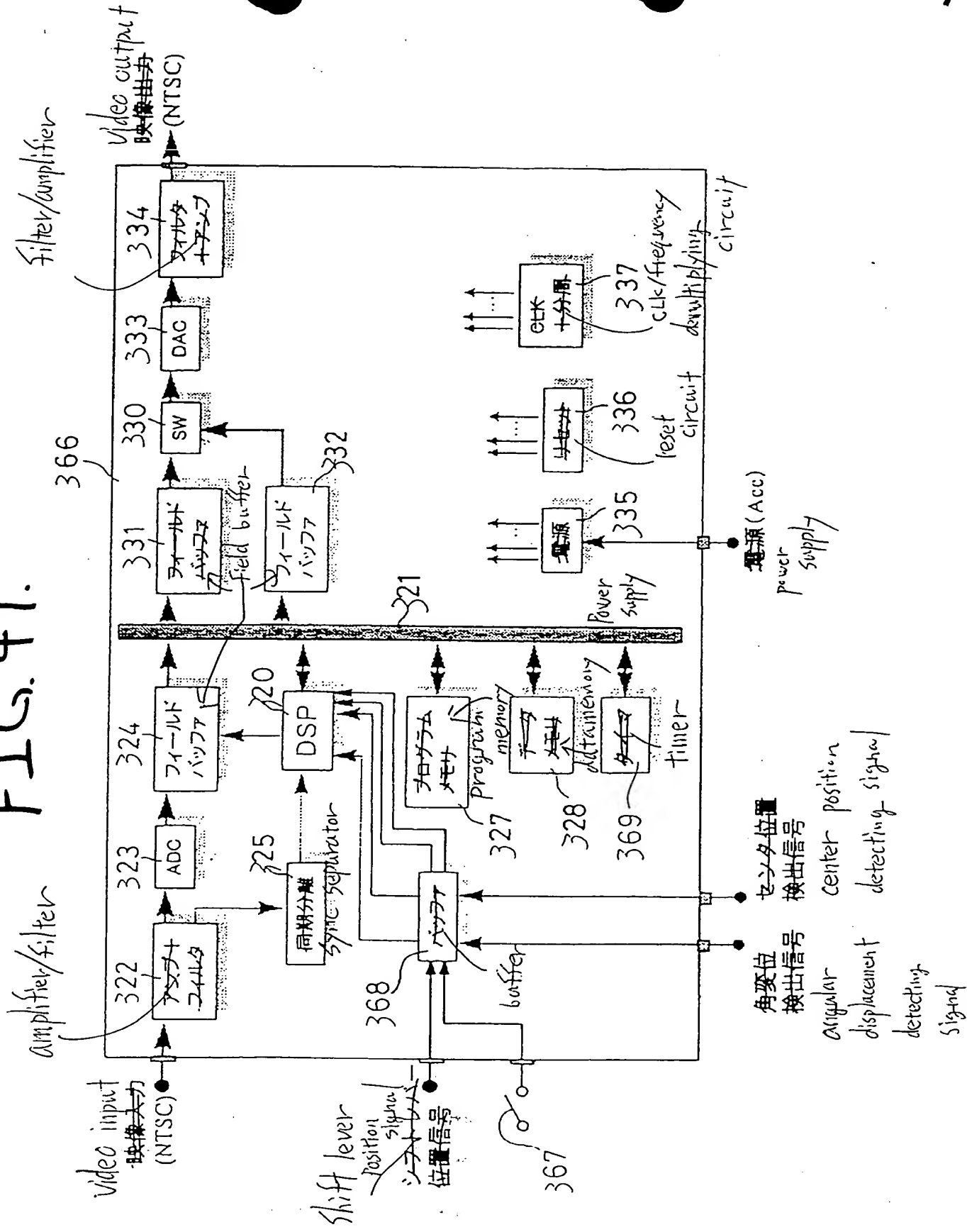


FIG. 47



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FIG. 49.



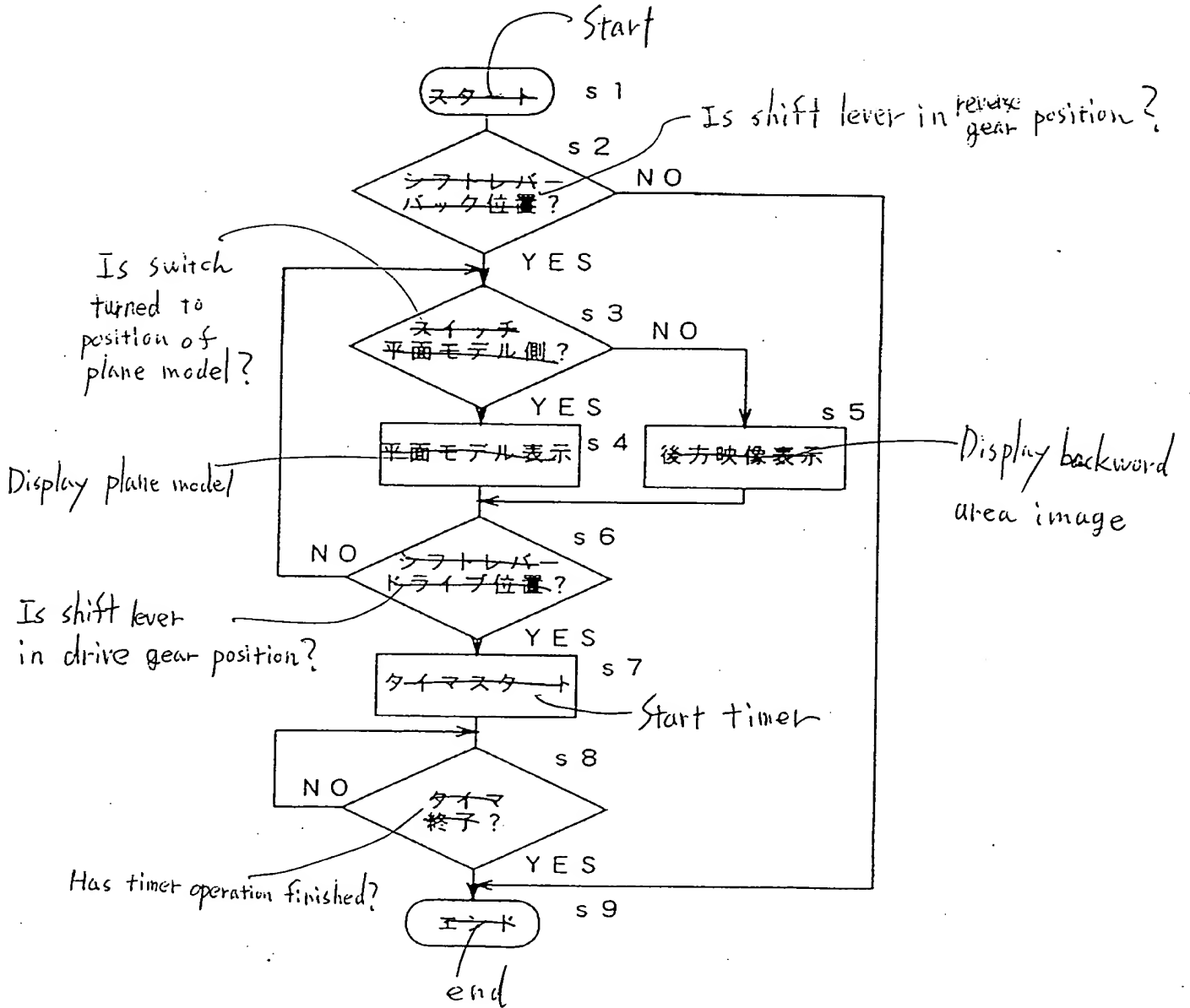


FIG. 50

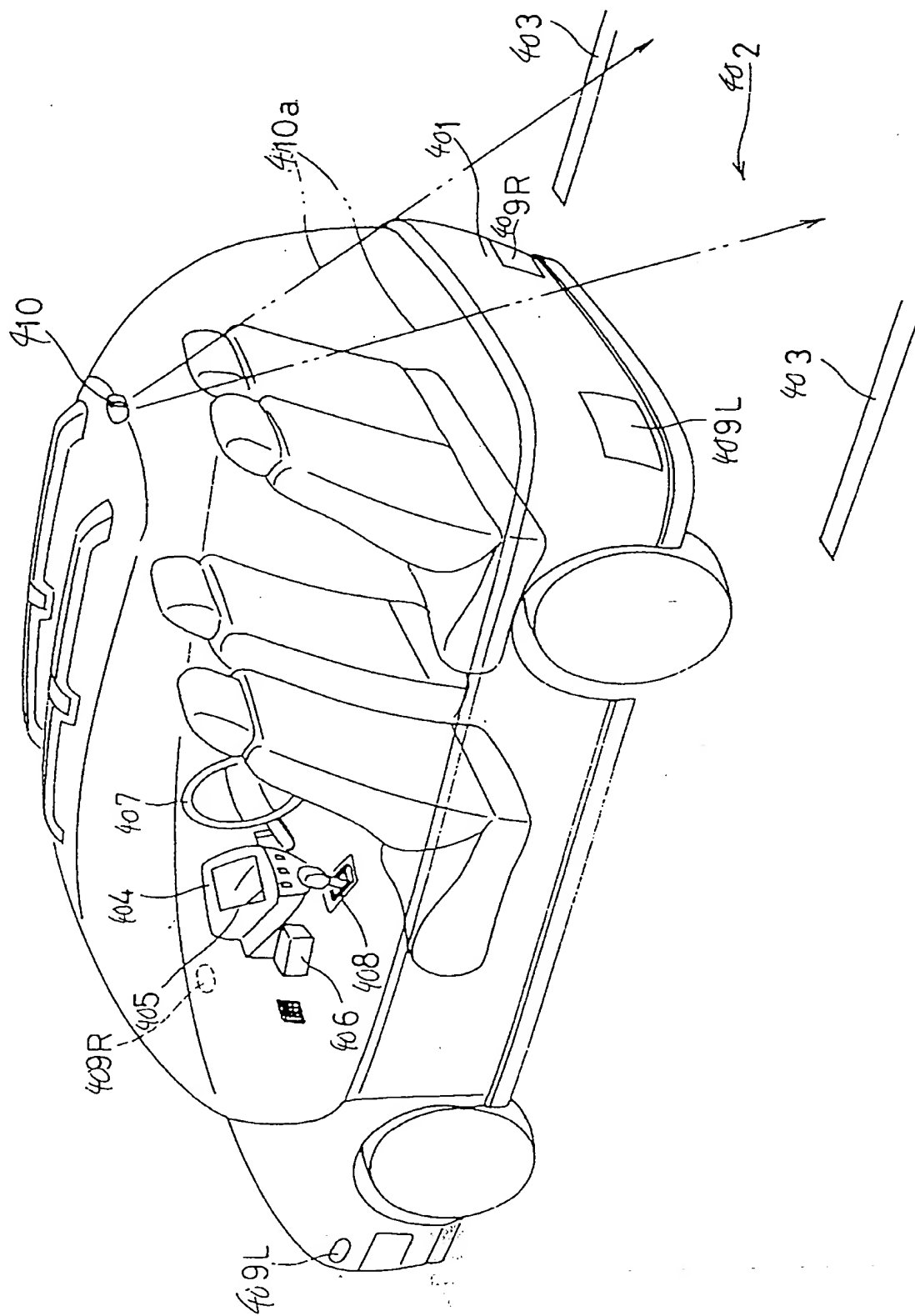


FIG. 51

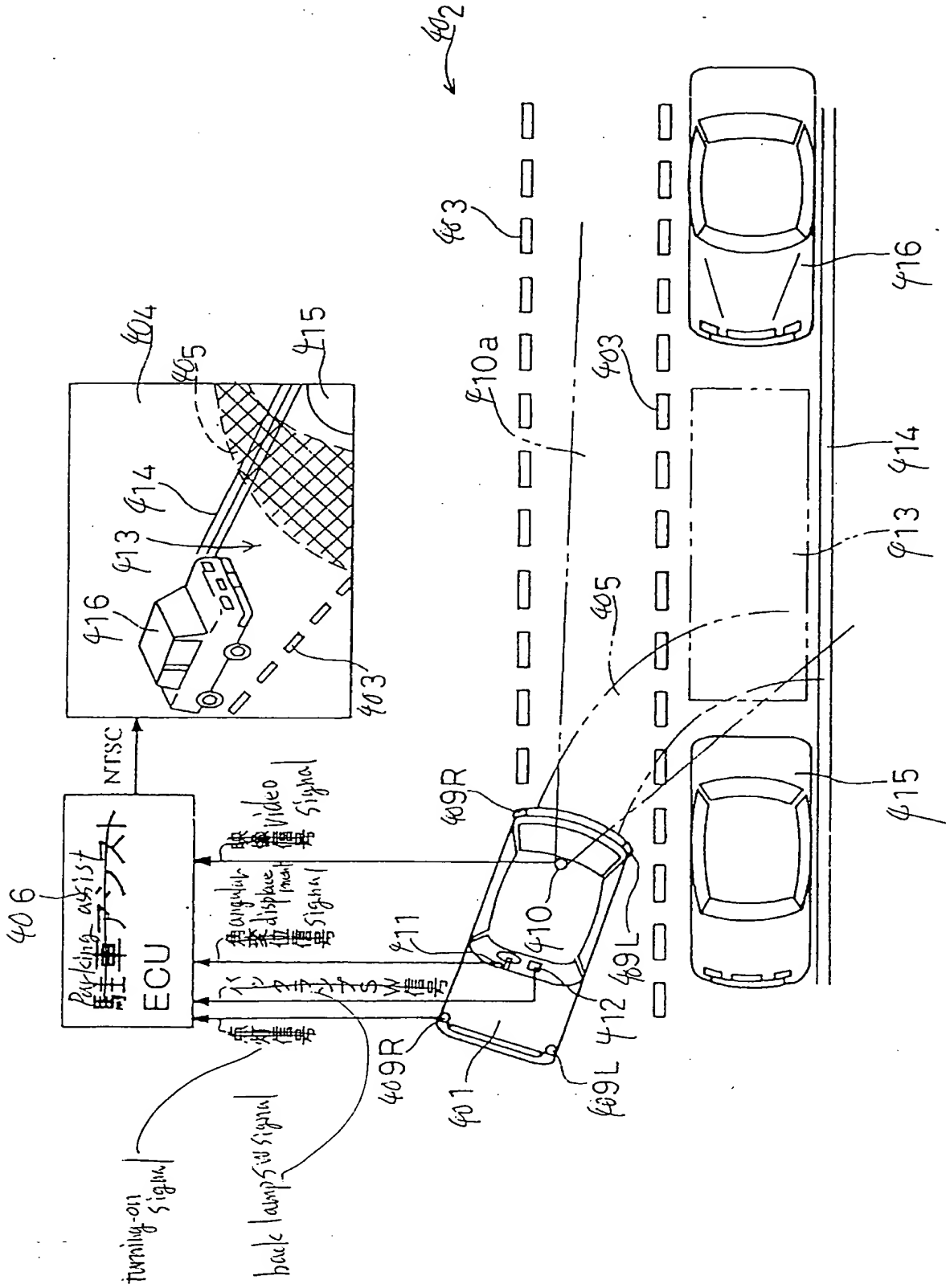


FIG. 53

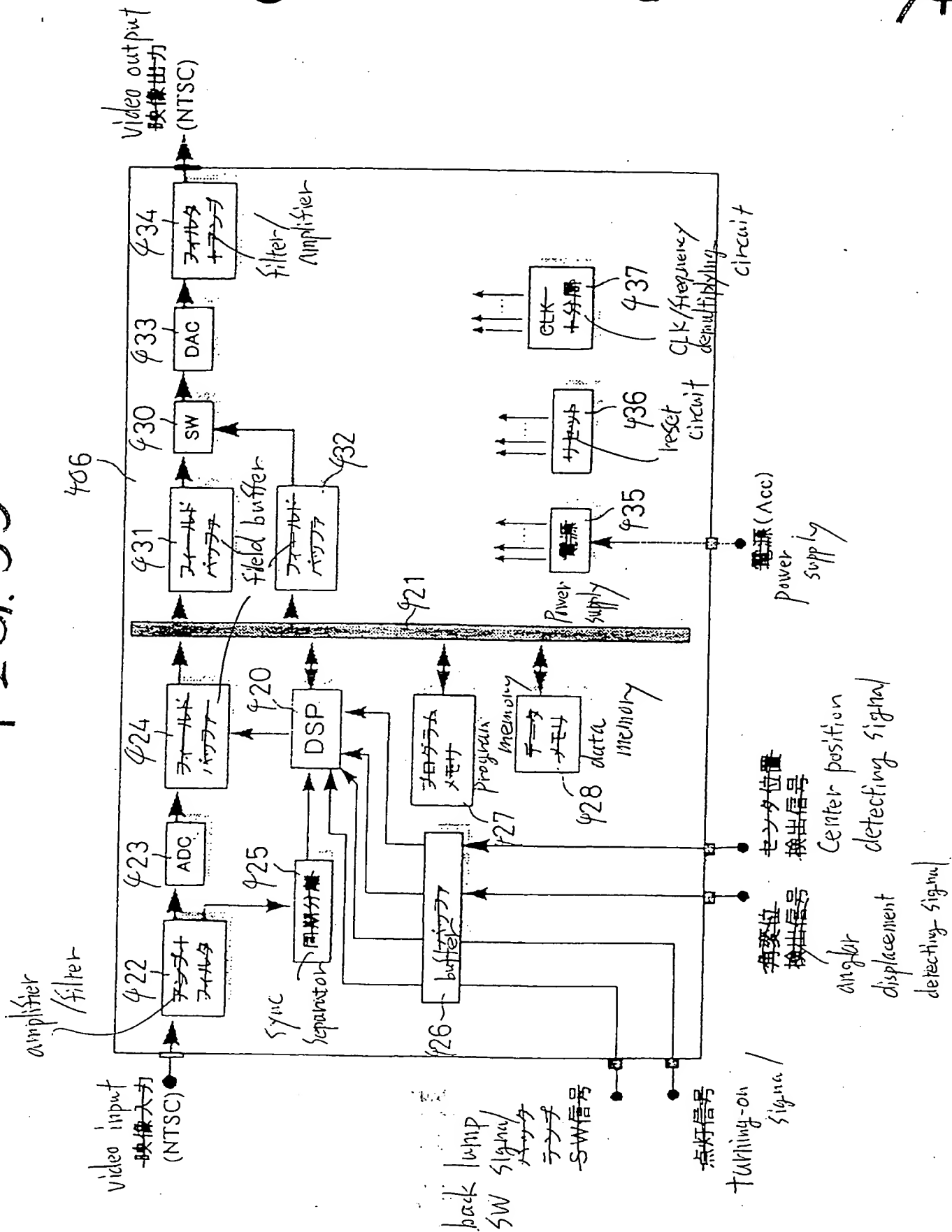


FIG. 59

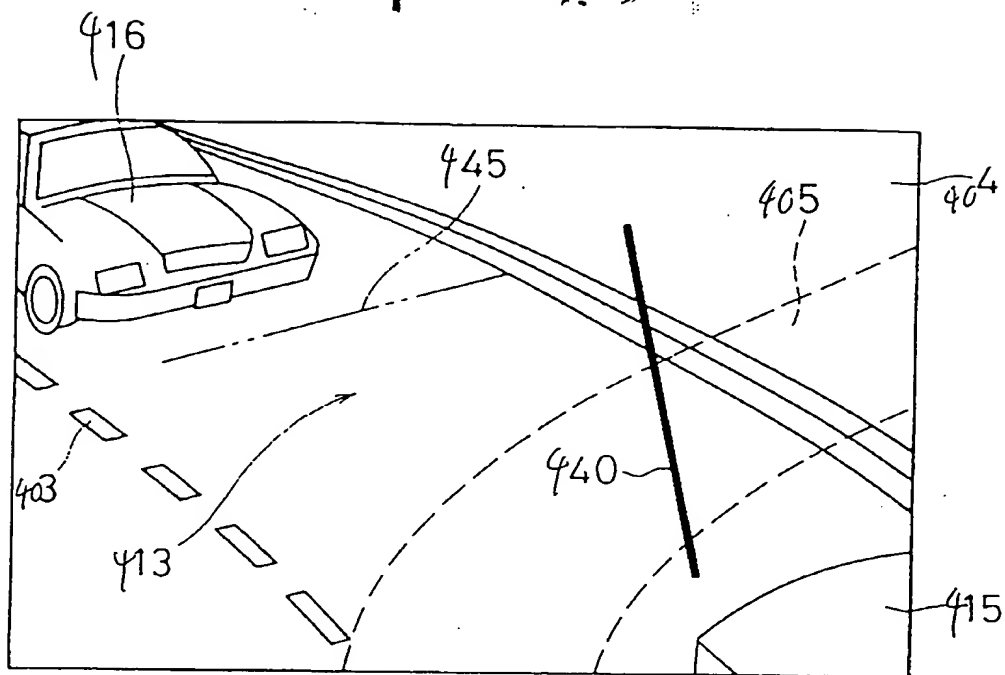
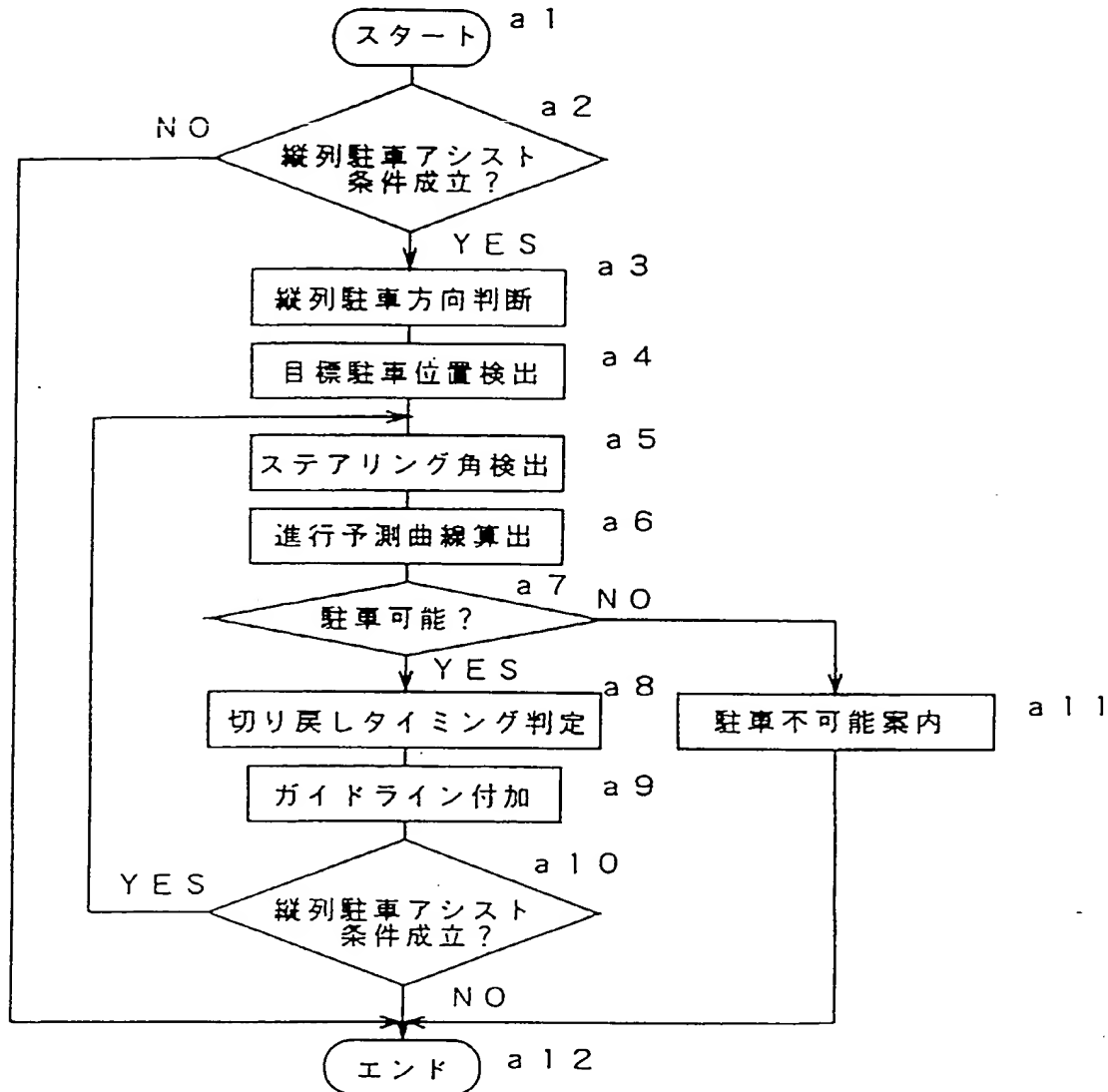


FIG. 55

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- a1 Start
- a2 Is series-parking assist condition hold ?
- a3 Judge road side for the series parking
- a4 Detects target parking position
- a5 Detect steering angle
- a6 Calculate predictive traveling path curve
- a7 Is parking possible ?
- a8 Judge reverse-turn of the steering
- a9 Add guide lines
- a10 Is series-parking assist condition hold ?
- a11 Carry out parking-impossible guide
- a12 End

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FIG. 56

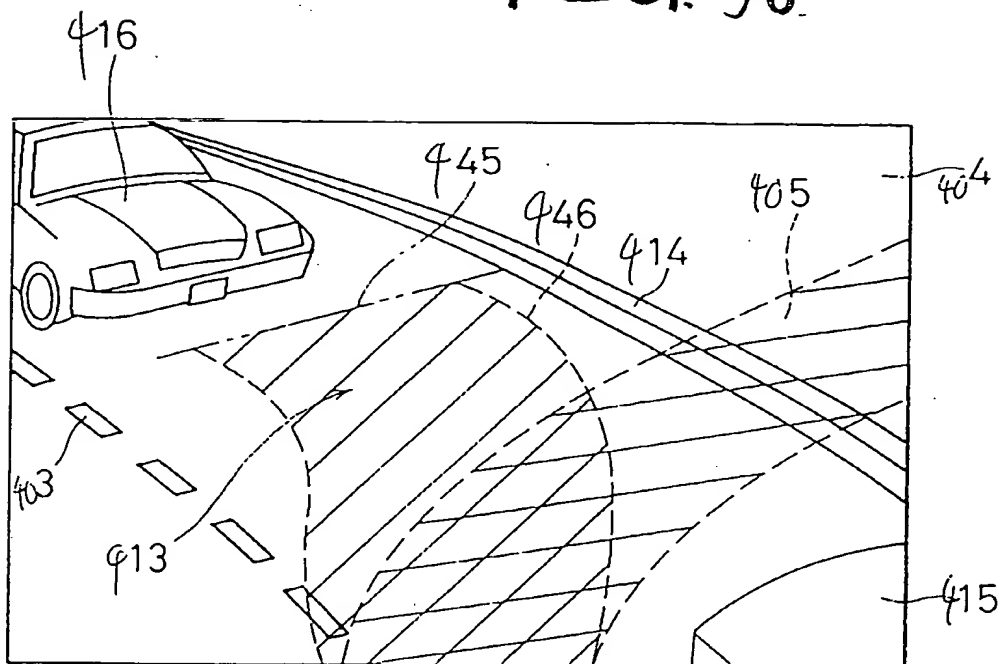
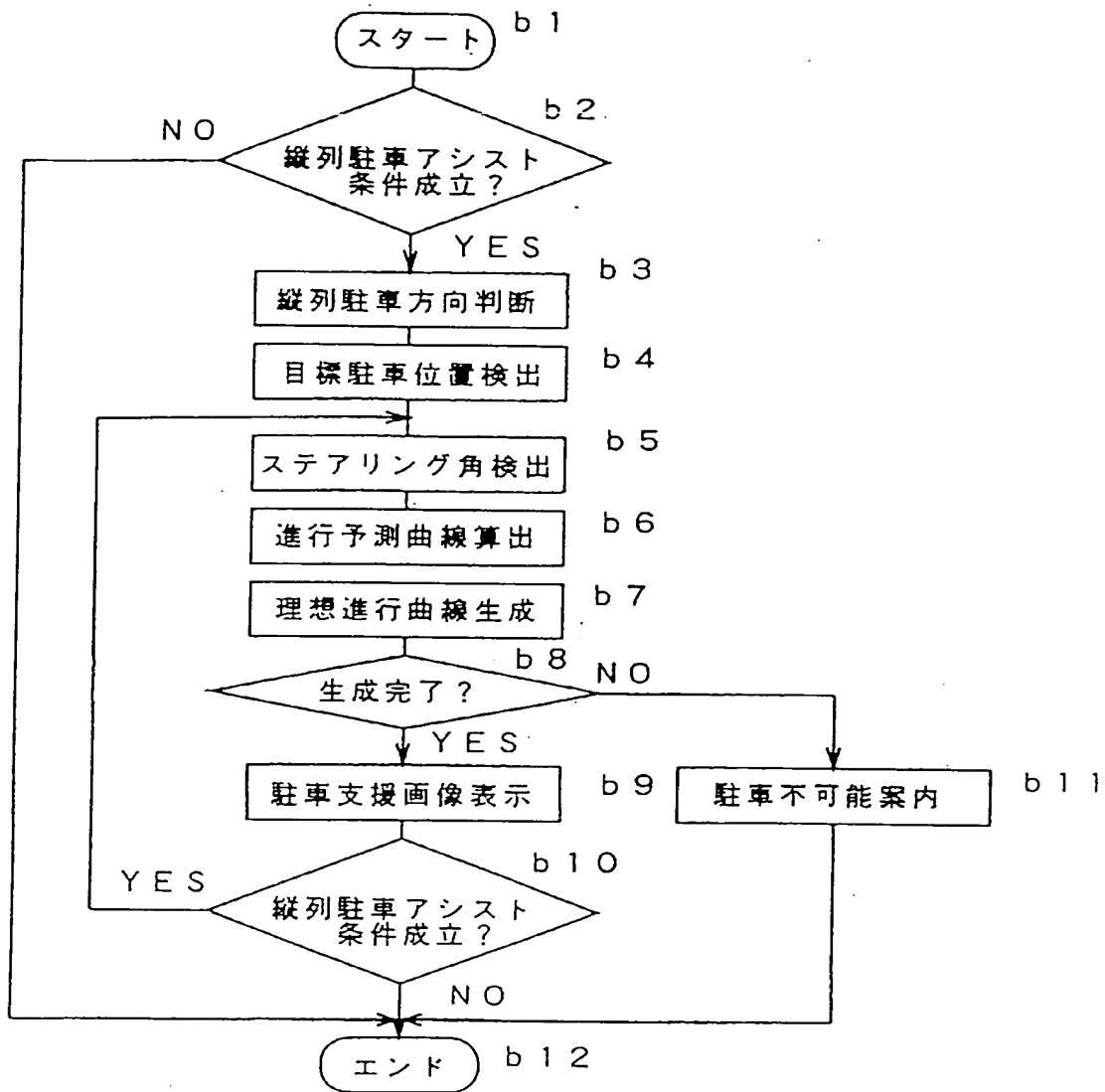


FIG. 5

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- b1 Start
- b2 Is series-parking assist condition hold ?
- b3 Judge the road side for the series parking
- b4 Detects target parking position
- b5 Detect steering angle
- b6 Calculate predictive traveling path curve
- b7 Generate ideal travelling path
- b8 Is ideal travelling path generated ?
- b9 Display a parking assist image
- b10 Is series-parking assist condition hold ?
- b11 Carry out parking-impossible guide
- b12 End

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